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# Guidance on transitioning to a risk-based solvency (RBS) regime

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## **Executive summary**

The objective of this paper is to provide practical guidance to supervisors who are intending to transition to a risk-based solvency (RBS) regime<sup>1</sup>. The paper provides insights into the journey towards RBS taken by a number of jurisdictions and provides guidance on key considerations in the design of an RBS regime and the process of implementing such a regime. The paper also includes a summary of case studies of RBS implementation in various jurisdictions. The paper has been developed under the ambit of the IAIS Risk-Based Solvency Implementation Forum (RBSIF), in cooperation with the International Monetary Fund (IMF).

RBS is a comprehensive, formally structured regime that seeks to ensure that insurers maintain a capital adequacy level commensurate with their risk profiles in order to guarantee that they have enough financial resources to withstand financial difficulties, supported by a sound corporate governance framework, in particular an enterprise risk management (ERM) system. An RBS regime includes quantitative, qualitative and disclosure elements. Quantitative elements may vary in sophistication depending on the level of development of the insurance market and the capacity of the supervisor.

Key motivations for transitioning to an RBS regime are: enhancing the protection of policyholders, supporting market development and financial inclusion, contributing to financial stability and supporting the transition to risk-based supervision (RBSup)<sup>2</sup>. A range of benefits and costs of implementing an RBS regime are set out in the paper.

Transitioning to an RBS regime should take into consideration the environmental factors of each jurisdiction and be tailored to its specific market circumstances. Some jurisdictions may not yet be ready for an RBS regime, and other insurance market development initiatives may be more pertinent in the near to medium term. Factors to consider include economic conditions and activities, the level of development of financial markets, demographics of the jurisdiction and cultural issues around the use of insurance, the development and sophistication of the insurance sector, the complexity of balance sheets and risks, and the resourcing of the supervisor. Supervisors usually look to the most sophisticated RBS regimes for reference, but their fitness for local implementation should be objectively assessed. A distinction may need to be made between a medium-term project plan to improve regulatory requirements and a long-term strategy to achieve the most sophisticated practices.

Implementing an RBS regime is not a short-term undertaking but rather a medium- to long-term project. Careful project planning is therefore very important. Strong project management and governance are required to ensure accountability and credibility. Internal and external stakeholder engagement is needed for transparency and buy-in. Getting an RBS project off the ground can be the most critical phase, in which the continuation of the project is most at risk. This phase should include endorsement by the executive of the supervisory authority, government buyin and endorsement, and establishment of a project team and project plan. A project plan has some key components: project governance structures; goals, tasks and activity schedule; risk assessment; a communication plan; assessment and reporting processes on progress against the project plan; and a process to formally launch the project. Formal launch of a project is often the public starting

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<sup>&</sup>lt;sup>1</sup> This is a public version of a members-only paper specifically intended for supervisors but a wider range of stakeholders may benefit from it.

<sup>&</sup>lt;sup>2</sup> RBS and RBSup are often used interchangeably but are two separate, interlinked concepts. RBSup refers to a formal, structured process for assessing insurers' risk profiles to guide the allocation of supervisory resources. The transition to an RBS regime generally necessitates transformation of supervisory processes as part of a broader RBSup transformation.



point of an RBS journey, and stakeholders measure and assess project timelines from this point forward.

An RBS project can be constructed in different ways depending on the nature of the jurisdiction's legal system, the resources available to the supervisor and the preferences of the supervisor and industry stakeholders. Every project has some key project stages required to complete the task, and most projects to transition to an RBS regime will have some stages in common. A conceptually-led project is one where the initial consultation is about the objectives of the project, with some options for designing the target RBS regime and a call for input on the implementation approach for the target RBS regime. There is no drafting of legislation or legislative instruments at this stage. A legislation-led project sets out the broad legislative framework for RBS, with technical details to be added later through other legal instruments such as regulations, standards or guidelines, all of which can be subject to separate consultation processes. RBS projects can be set up to implement all of the components of RBS (quantitative, qualitative and disclosure elements) at once or to implement the three components over time.

Stakeholder engagement is a critical element of an RBS project. Multiple consultations and field testing exercises can be expected. A comprehensive stakeholder engagement strategy may include other less formal steps as well, such as: newsletters, speeches, social media, webinars, bilateral meetings and conferences.

The implementation of an RBS regime involves cultural change for both the insurance sector and the supervisor, both of which require careful management. The implementation of RBS will entail a complete change in the day-to-day work of supervisors. The supervisor should consider the appropriateness of the structure of the supervisory teams. The supervisor should allocate sufficient (human and financial) resources to technology infrastructure to ensure alignment to RBS objectives. This includes investment in staff training and staff recruitment where skills gaps are identified. The transition to RBS may involve a gradual transition away from a regulatory and supervisory framework with extensive administrative requirements to one in which full responsibility for effective risk management lies with the board and senior management of insurers. Insurers may need time to develop new governance arrangements and to develop a risk management culture. The nature of interactions between the supervisor and insurers will also generally change to a focus on the risks to which an insurer is exposed and how they are managed.

**RBS** is a complex, interrelated set of quantitative, qualitative and disclosure requirements. An emerging market and developing economy (EMDE) supervisor should not attempt to "cut and paste" from a particular advanced market's quantitative solvency requirements. Such an approach could have negative consequences for insurers, the reputation of the supervisor and access to insurance products in a market. Rather, it is highly likely that adjustments, simplifications and calibration differences are warranted for implementation in an EMDE context.

Quantitative capital requirements are usually structured with a ladder of supervisory intervention (as required by ICP 17.4). The protection level of the RBS regime – as defined in relation to the prescribed capital requirement (PCR) – should be considered at the outset of the project. For EMDEs, replicating the same level of protection as is required in advanced market RBS regimes may be inappropriate when there are overarching goals of developing the insurance market. Any choice of a lower level of protection should be considered together with other aspects of the insurance regulatory regime and the market environment of the insurance sector. This guidance paper does not advocate for a particular level of protection, but it does advocate for quantitative testing to establish a level of protection that the local insurance sector can reasonably implement in the context of other goals such as market development and closing the protection gap. Transition requirements are also a tool that can be used if local insurers cannot meet quantitative capital requirements in the short to medium term.



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A critical component of any quantitative capital requirement is the methodology used to value assets and liabilities held on the balance sheet for solvency purposes. Due to the direct relationship between valuation and the quantum of capital resources, the choice of valuation approach can be the most material aspect of the development of a quantitative capital requirement. Any approach used should be in line with ICP 14 (Valuation). There are broadly three approaches to valuation for a quantitative capital requirement: (1) use general purpose financial reporting (GPFR); (2) use GPFR with adjustments; or (3) develop a bespoke solvency balance sheet for the purpose of solvency assessment. It should be noted that GPFR is produced for insurer stakeholders (principally shareholders and creditors), with a significant focus on determining profit for distribution in a particular reporting period. This purpose is not fully aligned with supervisory objectives of assessing the economic solvency position of an insurer at a point in time. This is the reason why supervisors in some advanced markets have chosen to develop bespoke valuation approaches for solvency purposes. The cost-benefit trade-off for EMDEs may be different. The implementation of International Financial Reporting Standard (IFRS) 17 in many jurisdictions starting 1 January 2023 may provide more confidence in basing valuation for solvency purposes on GPFR, even if some adjustments are considered desirable to achieve the necessary comparability and consistency of results for solvency assessment.

**Quantitative capital requirements should focus on measurable risks that can be addressed through a capital buffer.** There are three important design considerations for a quantitative capital requirement: (1) what risks should be measured; (2) how those risks should be measured; and (3) how the measures of risk or their related modules should be aggregated to determine the overall capital requirement. A supervisor may decide to stage the development of its capital requirement, beginning with factor-based calculations and moving to stress-based calculations or standard or internal model-based calculations at a later stage of RBS development.

To assess the solvency of an insurer, the qualifying capital resources to be compared with the capital requirement should be specified. In advanced markets, it is typical for qualifying capital resources to be classified into at least two tiers of quality of capital. However, if the financial instruments issued by insurers in an EMDE are not complex and insurer balance sheets are relatively straightforward, this complexity may not be warranted. Adjustments and deductions from capital resources should be considered. If the valuation approach gives a value to assets that are not readily available to absorb losses, there is typically a deduction of the value of that asset or an adjustment or haircut to the value of that asset for the purposes of calculating qualifying capital resources. The implementation of tiering of capital, limits on lower-quality tiers of capital, and deductions and exclusions from capital resources are all policy issues that require careful consideration.

Qualitative governance and risk management requirements are just as critical to an RBS regime as the quantitative requirements. These requirements should be principles-based. Insurers should be required to integrate risk assessment into the development and execution of their business strategies. The establishment of a risk culture is a major element of qualitative solvency requirements. Control functions are a key component of an RBS regime and play a critical role in assessing the capital adequacy and financial soundness of an insurer. The role of a control function is to "add to the governance checks and balances of the insurer and provide the necessary assurance to the Board in the fulfilment of its oversight duties". Per ICP 8 (Risk Management and Internal Controls), an insurer should have control functions that include risk management, compliance, actuarial matters and internal audit. In incorporating control functions into the regulatory regime, the independence and stature of the control systems should be observed.

Own risk and solvency assessment (ORSA) can be viewed as the bridge between the quantitative and qualitative components of an RBS regime. The ORSA is a core component of an ERM framework. ICP 16 (Enterprise Risk Management for Solvency Purposes) states that the



supervisor requires the insurer to establish within its ERM framework the requirement to perform an ORSA for solvency purposes to identify, measure, report and manage the insurer's risks in an ongoing and integrated manner. The supervisor should require the insurer to determine, as part of its ORSA, the overall financial resources it needs to manage its business given its risk appetite and business plans. The ORSA is the process through which the insurer analyses its long-term business viability and the necessary risk management and financial resources, extending beyond the time frame used to determine regulatory capital requirements. The output of the ORSA process is typically documented in an ORSA report submitted to the supervisor. ICP 16 provides standards and detailed guidance on ORSA, with key aspects summarised in this paper with an added EMDE context. Notably, a simplified version of ORSA could be employed as an initial building block, tailored to the specific contexts and capacities of EMDE markets. As skills, expertise and understanding mature, this simplified model could then be progressively elaborated into a more comprehensive ORSA framework.

**ICP 20 (Public Disclosure) sets out detailed requirements for disclosure.** As outlined in ICP 20, public disclosure of material information is expected to enhance market discipline by providing meaningful and useful information to policyholders and to market participants to make decisions about providing resources to the insurer. For EMDEs, this can mean tailoring requirements to market conditions and resource availability, for instance through simplified reporting for smaller insurers and phased implementation, as well as by focusing on the material risks that are most relevant to policyholders and relevant stakeholders.

**Overall, the document aims to support supervisors in implementing RBS regimes, emphasising the need to adapt RBS regimes to local conditions.** Both advanced and developing economies should recognise that this is typically a medium- to long-term project, requiring careful consideration of the insurance market and macroeconomic conditions to help determine if, when and how to embark on such a project. EMDEs should avoid directly copying advanced market frameworks, but they can use them as a reference, adjusting them to fit local capacities and supervisory objectives. Finally, RBS involves substantial cultural and operational changes, necessitating strong project management and stakeholder engagement to develop and implement both quantitative and qualitative regulatory elements.



## Acronyms

A2ii	Access to Insurance Initiative	
ACAPS	Supervisory Authority of Insurance and Social Welfare of Morocco	
ALM	Asset-liability management	
BCP	Business continuity plan	
CTE	Conditional tail expectation	
DTA	Deferred tax asset	
DTL	Deferred tax liability	
DRP	Disaster recovery plan	
EMDE	Emerging market and developing economy	
ERM	Enterprise risk management	
ES	Expected shortfall	
ETL	Expected tail loss	
FINMA	Swiss Financial Market Supervisory Authority	
GPFR	General purpose financial reporting	
IAIG	Internationally active insurance group	
IAC	Implementation and Assessment Committee	
IAIS	International Association of Insurance Supervisors	
ICP	Insurance Core Principle	
ICS	Insurance Capital Standard	
IFRS	International Financial Reporting Standards	
IMF	International Monetary Fund	
IRA	Insurance Regulatory Authority of Kenya	
IT	Information technology	
MAS	Monetary Authority of Singapore	
M&A	Mergers and acquisitions	



MAV	Market-adjusted valuation	
MCR	Minimum capital requirement	
NAD	Neutral Adjusted Dampener	
NDSR	Non-default spread risk	
ORSA	Own risk and solvency assessment	
OSIPP	Office of the Supervisor of Insurance and Private Pensions of Belize	
PCR	Prescribed capital requirement	
PDC	Policy Development Committee	
PPS	Policyholder protection scheme	
QIS	Quantitative impact study	
RBC	Risk-based capital	
RBS	Risk-based solvency	
RBSIF	Risk-Based Solvency Implementation Forum	
RBSup	Risk-based supervision	
SAM	Solvency Assessment and Management	
SBS	Superintendencia de Banca, Seguros y Administradoras de Fondos de Pensiones del Perú	
SCR	Solvency capital requirement	
SMI	US Solvency Modernization Initiative	
SMR	Solvency margin ratio	
SPFO	Strategic Plan and Financial Outlook	
SSB	Standard-setting body	
SST	Swiss Solvency Test	
SUSEP	Superintendência de Seguros Privados de Brasil	
T-VaR	Tail value-at-risk	
VaR	Value-at-risk	



## **1** Introduction

## 1.1 Objectives and scope

- 1. The objective of this paper is to provide practical guidance to supervisors who are intending to transition to a risk-based solvency (RBS) regime. Transitioning to an RBS regime is an important undertaking, typically involving a project that takes a significant amount of time to complete. This paper attempts to provide the components of a blueprint that can be used to inform project planning, resource allocation and stakeholder engagement for any jurisdiction contemplating the transition from simple solvency requirements to an RBS regime.
- 2. This paper provides insights into the journey towards RBS taken by several jurisdictions and provides guidance on key considerations in the design of an RBS regime and the process of implementing such a regime. It uses those experiences to provide generic guidance about how to approach such a project. It is not intended to provide a definitive technical guide on what should be implemented as an RBS regime. One of the key learnings from this paper is that supervisors should research a range of RBS regimes and then design an RBS regime that is fit for purpose in their jurisdiction for legal entity-based supervision.
- 3. This paper mainly focuses on legal entity supervision. Nevertheless, jurisdictions that have large insurers with operations in several other countries may want to consider an RBS regime that includes a group-wide approach. The International Association of Insurance Supervisors (IAIS) has developed the Insurance Capital Standard (ICS) to provide a more harmonised approach for the supervision of internationally active insurance groups (IAIGs). Where relevant, the paper refers to the ICS to help illustrate a point or provide an example. The ICS may provide a useful reference for the development of jurisdictional legal entity-based RBS, but it is important to keep in mind that the ICS is designed specifically for diversified, global IAIGs.
- 4. The primary intended audience for this paper is board members, senior executives and staff of supervisors. The document is intended to help inform public bodies and stakeholders about the resources, time, challenges and illustrative practices related to developing an RBS regime.3 After reading this guidance document, relevant authorities should be able to construct a blueprint for implementing RBS that is suitable for their market. It is important to note that well known, sophisticated models of RBS from advanced jurisdictions may not be suitable for many emerging market and developing economies (EMDEs).
- 5. The technical specifications of some jurisdictions' RBS regimes are included in the paper for reference. This is not an endorsement of any of these RBS regimes or a view on whether any of these regimes are fully observing the relevant ICPs. Observance of ICPs requires the necessary regulatory framework, the necessary supervisory processes, clear practical implementation of those supervisory processes and an enforcement infrastructure that is used when necessary. No regime is perfect or incapable of improvement; this is evident from the regular reviews of RBS regimes that have been implemented in various jurisdictions over time. However, all implemented RBS regimes have good and useful features that can be considered by supervisors in designing their own RBS regime. It is important to note that any RBS regime is a compromise between what may be theoretically desirable and what is practically implementable. Every jurisdiction will have its own cost-benefit trade-offs to consider based on

<sup>&</sup>lt;sup>3</sup> Supervisors may share this document with relevant government ministries and staff in consultation for the transition process.



its local market's state of development, availability of assets, product mixes and other considerations.

- 6. This paper has been developed under the ambit of the IAIS Risk-Based Solvency Implementation Forum (RBSIF), in cooperation with the International Monetary Fund (IMF). In developing this paper, the RBSIF reported to the Implementation and Assessment Committee (IAC) and also benefited from comments from the Policy Development Committee (PDC), Accounting and Auditing Working Group (AAWG) and Capital, Solvency and Field Testing Working Group (CSFWG).
- 7. This paper forms part of the IAIS' efforts to support its members, specifically EMDE members, in their efforts to strengthen their regulatory regimes and supervisory frameworks in line with the IAIS' global standards. The development of this paper was a specific project under the IAIS' 2023-2024 Roadmap.

#### **1.2 Structure of the guidance**

- 8. **Chapter 2** sets out the definition of RBS, its main elements and how it links to and is distinct from risk-based supervision (RBSup). It addresses key drivers for the transition, including the costs and benefits of implementing an RBS regime.
- 9. **Chapter 3** covers general considerations prior to embarking on a transition to RBS, such as assessing the macroeconomic environment, market maturity and preparedness, available infrastructure and considerations around market discipline and policyholder protection. The general considerations presented in this chapter lay the ground for defining the key steps and elements of setting up a project plan, such as defining the scope of the project, project governance and communication strategy, risk monitoring and management of internal and external stakeholders.
- 10. **Chapter 4** focuses on the practical aspects of implementing an RBS regime. It covers various topics, including approaches to the transition and key elements of a project plan. It emphasises the importance of involving stakeholders throughout the project and provides practical considerations for effective stakeholder management. Additionally, it highlights the significance of managing changes in legislation and conducting field testing as key elements of the transition. The chapter also discusses transitional arrangements, such as running two regimes in parallel.
- 11. **Chapter 5** delves into the more technical aspects of transitioning to RBS, including the work that needs to be undertaken in defining the future regime and a deep dive into the details of the key elements of RBS regimes (ie quantitative, qualitative and disclosure elements). This chapter touches on the considerations for designing or selecting the type of regime as well as criteria for identifying an adequate benchmark. Qualitative elements, particularly the own risk and solvency assessment (ORSA) in line with the standards outlined in ICP 16, are presented as key to developing an appropriate risk culture in an insurer.
- 12. **Chapter 6** provides a summary of case studies on the approach to and process of RBS implementation across different member jurisdictions, focusing on topics such as project management, stakeholder engagement, internal resources required, time taken etc.
- 13. An additional set of comprehensive case studies has been developed by the IMF and is available for access here: <u>Implementing Risk-Based Solvency for Insurers—Lessons from Kenya</u>, Mexico, and South Africa.



## 2 What is RBS and why implement it?

#### 2.1 Definitions

- 14. **RBS** is a comprehensive, formally structured regime, both quantitative and qualitative, that seeks to ensure that insurers maintain a capital adequacy level commensurate with their risk profiles in order to guarantee that they have enough financial resources to withstand financial difficulties, supported by a sound corporate governance framework, in particular an ERM system.
- 15. **RBSup** is a formal, structured process whereby a risk assessment<sup>4</sup> is performed on each of the insurers and insurance groups in a jurisdiction to determine a risk profile in order to guide the allocation of supervisory resources.

#### 2.2 Elements of an RBS regime

16. **RBS and RBSup are terms often used interchangeably, but in fact they are two separate concepts that cannot be used in isolation.** Figure 1 demonstrates the interlinkage between RBS and RBSup. RBSup includes wider but fundamentally closely related concepts, such as powers, objectives, corrective measures, supervisory practices and licensing. The transition to an RBS regime generally necessitates a transformation in how a supervisor is organised and resourced, as well as its supervisory processes; ie it is part of a larger RBSup project.

Figure 1: Risk-based supervision



Source: IMF Staff.

17. An RBS regime can come in a range of forms. Simpler forms include formula-based capital requirements, and the most complex form is based on standard or internal models used by insurers for their internal risk management purposes (see Figure 2).<sup>5</sup> The form of RBS regime

<sup>&</sup>lt;sup>4</sup> Aspects such as solvency position, quality of corporate governance and ERM system will inform the risk assessment for allocating supervisory activities and resources.

<sup>&</sup>lt;sup>5</sup> The range of regulatory regimes and sensitivity to risk are covered in Section 5.2.4.



that is appropriate for a given jurisdiction at a given point in time will depend on the nature, size and complexity of market conditions, structures of the insurance sector and the supervisor, the available technical capacity within the insurance sector and the supervisor, and the quantification of the relevant risks and mitigants.

- 18. Various elements make up an RBS regime. As demonstrated in Figure 1, an RBS regime includes both quantitative, qualitative and disclosure elements (refer to the red circle).
- 19. The quantitative elements include valuation bases for assets and liabilities (including technical provisions or insurance liabilities), treatment of investments (allowed and disallowed assets), the calculation of capital requirements (various risk modules), recognition of capital resources (by type, term and characteristics) and the resulting solvency ratio. The quantitative requirements also include conducting an ORSA, which tests the insurer's financial soundness over a given period of time using various stresses and scenarios to ensure long-term stability and solvency.
- 20. The qualitative requirements, on the other hand, cover the governance framework, which includes oversight roles and responsibilities (board of directors, senior management and heads of control functions) and governance structures like the risk management system, the internal control system and the control functions. Other elements to be covered under the qualitative regulatory requirements include the ORSA and risk mitigations like reinsurance.
- 21. The third element of an RBS regime is supervisory reporting and disclosure requirements with respect to both qualitative and quantitative information. This aids the supervisor in bringing together both the qualitative and quantitative requirements, which is key not only to monitoring compliance with the regulatory requirements but also to performing a risk assessment on an insurer.

Figure 2: Range of quantitative solvency requirements and sensitivity to risk<sup>6</sup>



Source: RBSIF Drafting Group.

<sup>&</sup>lt;sup>6</sup> For more details on these regimes (eg, specifications on standard model-based calculations and on internal model-based calculations respectively), please see Section 5.2.4 Choice of calculation approach to risk measurement.



### 2.3 Objectives

- 22. The motivations for transitioning from simple solvency standards to an RBS regime can be multiple, including but not limited to protecting policyholders, supporting the development and adequate capitalisation of insurance markets and contributing to financial stability underpinned by consistent implementation of international standards. The limitations of simple solvency standards and a desire to address these limitations is the most fundamental reason for moving to an RBS regime.
- 23. There can also be a desire to align with international standards, including ensuring that the jurisdiction can be considered to be observing as many of the ICPs as possible. There may also be a desire to align with best practice in order to be seen as an attractive and safe regulatory environment for international insurers. A further reason can be found in addressing regulatory arbitrage among different sectors. See Box 1 for examples on drivers for transitioning to RBS.
- 24. With respect to enhancing the protection of policyholders, an RBS regime allows supervisors to better understand insurers' business models and risk profiles. It links the risks within an insurer to the level of capital requirements. It also gives the supervisor the ability to measure all material risks and the available economic resources.
- 25. Regarding support for market development and financial inclusion, given that an RBS regime is a principles-based regulatory framework, it allows supervisors to apply proportionality. This means that requirements can be applied in a manner proportionate to the nature, size and complexity of an insurer. A supervisor can therefore design an RBS regime such that it allows for simpler requirements to be applied to simpler business models, without compromising policyholder protection. It also allows for flexibility in application so that new market entrants can progressively meet requirements as their businesses mature.
- 26. The implementation of RBS can foster financial stability by promoting early risk identification and mitigation, ensuring adequate capital levels relative to risks, and enhancing disclosure. It also helps prevent the build-up of systemic risk by promoting sound risk management practices and facilitating a supervisory response when necessary. As a principles-based regime, it can respond to changing market conditions, promoting safe insurance markets and stable financial systems.
- 27. An RBS regime is supportive of and interlinked with an RBSup approach. A supervisor transitioning to RBS without the implementation of an RBSup approach will not fully achieve the objectives of the transition to RBS (see Figure 1). The implementation of an RBS regime supports RBSup on both a micro and a macro level. As the RBS regime is reflective of the risks within an insurer, the supervisor would not only be able to determine the material risks but could also tailor its supervisory responses accordingly. Subject to a jurisdiction's particular characteristics, it may be beneficial to first put in place an RBSup framework in order to develop a risk culture that could help inform the development of an RBS regime.

#### Box 1: Jurisdictional experiences – Triggers for implementing RBS

#### Switzerland

Switzerland's transition to RBS was motivated by the need to strengthen its regulatory regime in response to market developments.

The period prior to the 2000s saw Switzerland experience factors such as falling interest rates and declining returns from equity markets. There were no risk-sensitive solvency requirements in place for insurers. In response to this – and with the aim of enhancing protection of policyholders and



strengthening the position of the supervisor – Switzerland established the Janssen commission, which recommended the development and implementation of the Swiss Solvency Test (SST).

#### South Africa

The transition to RBS in South Africa was motivated by a range of factors, including:

- Alignment with the IAIS' ICPs and the economic basis insurers use to manage their business;
- Enhancing insurers' risk quantification and risk management practices;
- Addressing concerns in observed market practices, including creating a level playing field for local and foreign reinsurers, introducing a proportionate microinsurance regulatory framework and introducing a set of dedicated requirements for insurers operating as cell captives; and
- Supporting market development by promoting comparable requirements for South African insurance groups relative to their global peers.

Accordingly, in 2018, South Africa implemented its Solvency Assessment and Management (SAM) framework to align with international insurance standards and enhance the stability and soundness of its insurance industry.

#### 2.4 Advantages and costs of implementation

- 28. **Transitioning to RBS should be supported by concrete evidence, accounting for the advantages and costs of implementation.** A critical step in the transition process should be a feasibility study and/or an economic impact study that considers both the benefits and costs of such a transition. It is important to note that not all benefits will be quantifiable, nor would they necessarily be immediately observable.
- 29. It is not only the objectives, advantages and costs that determine whether a jurisdiction should transition to an RBS regime. There are certain important general considerations (see Chapter 3) that need to be carefully assessed before the transition journey can begin.

#### 2.4.1 Advantages

- 30. An RBS regime encourages a strong risk management culture in insurers. A sound risk management culture can incentivise an increased focus on long-term viability. It provides incentives for insurers to adopt more sophisticated risk monitoring and risk management tools. Heightened risk awareness, coupled with greater transparency, can lead to heightened confidence in the insurance industry.
- 31. One goal of an RBS regime is to ensure that insurers' capitalisation levels cover material risks adequately. There is a danger that capitalisation in non-RBS regimes can miss major risks or add too much cost to insurance offerings through excessive conservatism. An RBS regime facilitates more accurate risk pricing, which can in turn contribute to competitiveness and the growth of insurance capacity in the jurisdiction.
- 32. The implementation of an RBS regime can support alignment with international standards and international best practices. As insurers and insurance groups expand globally, exposure to the global insurance industry increases and these insurers and insurance groups are more exposed to the cycles of the global insurance industry. By implementing an RBS regime aligned with international best practices, insurance groups would benefit from comparability with global



peers. This can allow for mutual recognition of supervisory regimes by international authorities (for example, in the consideration of merger and acquisition (M&A) transactions).

## Box 2: Jurisdictional experience – Alignment with international standards and tapping into international markets as key drivers

#### Bermuda

Adherence to international standards and attracting international business were among the key triggers for implementing RBS in Bermuda:

- In 2016, Bermuda earned full Solvency II equivalence status from the European Union (EU); and
- In 2019, Bermuda earned US NAIC Reciprocal Jurisdiction status.
- 33. **RBS can facilitate closer integration of macro- and microprudential supervision.** The RBS regime is a continuous and dynamic process that allows for early identification of any developments and changes in the environment that may adversely affect the insurer or the industry as whole. The early identification of emerging risks helps facilitate timely interventions. Due to the comparability of an RBS approach across the insurance industry, supervisors may also use peer grouping of entities per type of risk or business model (for example, separating life insurers from non-life insurers and further separating life insurers doing investment-type business from life insurers doing risk business only); this can in turn allow the supervisor to identify, assess and monitor systemically relevant risks and trends more easily.<sup>7</sup>
- 34. Better understanding of the business models of insurers. An RBS regime is aligned with the organisation and management of an insurer. It enables supervisors to segregate inherent risks from risk management processes. This facilitates better evaluation of risks and can lead to an in-depth understanding of an insurer's operations, its risk appetite and the key drivers of its risk profile. In line with a better understanding of the economic risks of products, supervisors may find that insurers reassess the products they offer as RBS is developed and they gain a better understanding of the economics of different product types. Some products may be withdrawn from the market by insurers as they learn that there is not an adequate return on the amount of capital they need to allocate to provide these products or that the economic value of these products is negative. These facts may not be revealed under existing accounting standards and non-risk-based capital requirements.
- 35. Efficient and cost-effective utilisation of scarce supervisory resources through prioritisation of supervision based on risks. An RBS regime provides flexibility to supervisors to apply supervisory judgement within a structured approach. It facilitates the early identification both of insurers with supervisory concerns and of specific aspects of the insurers that require attention. This in turn leads to improved and informed decision-making. When properly implemented, an RBS regime tailors regulatory requirements to the risk profiles of insurers and can lead to more agile, less burdensome supervisory responses, paving the way for effective RBSup.

<sup>&</sup>lt;sup>7</sup> IAIS (2021b) provides guidance on identifying and, where necessary, addressing the vulnerabilities of both individual insurers and the insurance sector to shocks from the external environment (inward risks) and the build-up of systemic risk – at the individual insurer level or within the sector as a whole – that may be transmitted to the external environment (outward risks), in line with ICP 24 (Macroprudential Supervision).



#### 2.4.2 Costs

- 36. **Transitioning to an RBS regime will have cost implications for both the supervisor and insurers.** The development and implementation of an RBS regime can carry costs associated with building capacity, putting in place appropriate technological infrastructure and data collection capabilities, and changing the organisational structures of both the supervisor and insurers. Initial costs could be substantial and could be either direct or indirect.
- 37. An RBS regime requires a supervisor to have adequate resources and to build capacity to perform specific functions. An RBS regime can only be implemented effectively when the supervisor has staff with a wide spectrum of skills, such as actuarial, accountancy, risk management and information technology (IT) expertise. Existing staff may need to be upskilled; training of staff is therefore critical. To be effective, the supervisor may need to restructure. As the transition to an RBS regime is a significant change, the supervisor should invest time and money in change management initiatives.
- 38. The insurer will also incur costs to ensure it has adequate resources to meet the requirements of an RBS regime. Like the supervisor, the insurer may need to recruit additional resources to meet the wide spectrum of skills required. Dedicated resources should also be allocated to participating in the development and implementation of the RBS regime. Budgeting for training of both the staff and the governance structures within an insurer would be required.
- 39. An RBS regime will require appropriate technological infrastructure and data collection capabilities within the supervisor. The supervisor should put in place the appropriate tools to collect, collate and analyse data. This needs to be supported by the appropriate software and IT infrastructure.
- 40. An RBS regime would also require insurers to review and possibly change their business models, organisational structures and systems. As the RBS regime will be reflective of the risk profile of an insurer, it may result in the insurer making changes to its business model to be more capital-efficient. Changes in product design is one of the areas where an insurer could incur costs. With the additional qualitative requirements of an RBS regime, insurers would need to assess their current governance structures to see if they are fit for purpose and make any necessary changes or additions. Lastly, investment in systems development may well be needed for insurers to meet the data requirements of an RBS regime.
- 41. A complex RBS regime can disproportionately increase costs for smaller insurers. If an RBS regime does not reflect the nature, size and complexity of the insurance sector in a jurisdiction, it can create unnecessary regulatory burdens/costs for smaller insurers. The unintended consequences can create an additional burden on smaller insurers to the point that they may need or want to exit the market. Therefore, applying proportionality in the implementation of an RBS regime is particularly important.

## **3** General considerations for transitioning to an RBS regime

42. This chapter addresses general considerations for transitioning to an RBS regime, notably macro environment factors that will affect the choice of RBS regime and whether to move to an RBS regime at a particular point in time. The chapter covers the resources required both at the supervisor level and within the insurance industry. If the necessary conditions are not in place for a successful RBS implementation, this would tend to indicate that the project timing and steps to be taken should consider whether further developments are needed first.



- 43. The transition to an RBS regime is a major step for any insurance market. It is important to keep in mind that regulatory initiatives should be taken in consideration of the environmental factors of each jurisdiction and tailored to the specific market circumstances. Some jurisdictions may not yet be ready for an RBS regime, and other insurance market development initiatives may be more important in the near to medium term. Jurisdictions should take a holistic view of insurance market development, with a long-term perspective that should include a possible phased transition to an RBS regime and an RBSup regime. The perfect set of circumstances for developing an RBS regime is not likely to exist in any jurisdiction, and some level of insurance market development and supervisor resourcing improvement is likely necessary through the life of the RBS project.
- 44. Factors to consider include: economic conditions and activities, the level of development of financial markets, the demographics of the jurisdiction and cultural issues around the use of insurance, the development and sophistication of the insurance sector, the complexity of balance sheets and risks, and the resourcing of the supervisor. Consideration of each of these factors should inform the steps that need to be taken in transitioning to an RBS regime, the type of RBS regime to be chosen and implementation priorities and staging of reforms.
- 45. Figure 3 sets out some considerations and maps these to the range of quantitative regulatory requirements and level of risk sensitivity that may be needed. An analysis across these six broad sets of considerations should not be considered on a static point-in-time basis. The analysis may be conducted during the initial feasibility stage, before the RBS project begins. Additionally, the project might include milestones for changes in some of these factors to improve the environment for implementing RBS. Because implementation of an RBS regime will likely result in changes in the insurance industry and the supervisor, there should be a robust and frank appraisal at the outset of the project to inform the changes that may need to be made to these factors.
- 46. It is likely that a jurisdiction will be at differing stages of sophistication across the different environmental factors listed in Figure 3. For example, it may have more sophisticated economic conditions and financial markets, but the insurance sector may be at an earlier stage of development. It is likely that the impact of the first three factors (covering economic conditions and activities, financial market sophistication, and demographics and culture) will have a pervasive impact on the other three factors. It is unlikely that a jurisdiction with unstable economic conditions or ineffective fiscal and monetary policies would have a sophisticated insurance sector. Similarly, it is unlikely that a jurisdiction with less sophisticated financial markets would have insurers with complex balance sheets. It is rare to have a well resourced supervisor in a jurisdiction with unstable or ineffective fiscal and monetary policies. The first three factors will have an impact on the last three factors (over which supervisors will have more influence). If sophistication levels are low in the first three factors, then a simple non-RBS approach to solvency may continue to be appropriate in the short to medium term while the government focuses on economic development. In such circumstances, greater focus may be placed on qualitative requirements and more intense supervisory activities.
- 47. When considering the sophistication of quantitative solvency regimes, for a solvency regime to be risk-based, it should start at least with a factor-based regime. ICP 17 (Capital Adequacy) can be observed if a simple, fit-for-purpose and proportionate factor-based regime is put in place. Increasingly sophisticated approaches are therefore also likely to be able to result in ICP 17 being observed if they are fit for purpose. As per paragraph 9 of the Introduction and Assessment Methodology of the ICPs, the ICPs are expected to be implemented proportionately. The paragraph above implies that, in a jurisdiction with a challenging macro environment for the insurance sector, a simple non-RBS approach may be fit for purpose for an interim period while



economic development creates the circumstances for implementation of RBS. This would mean that ICP 17 would not be observed. The IAIS encourages jurisdictions to implement the ICPs as fully as possible. The IAIS acknowledges that conditions outside the control of a supervisor may have an impact on the ability of a jurisdiction to implement the ICPs, and this is acknowledged through the preconditions set out in the Assessment Methodology. A supervisor may strategically state its intention to implement RBS and fully observe ICP 17 when conditions in the jurisdiction are supportive of more sophisticated regulatory and supervisory frameworks.



Figure 3: Considerations for the choice of quantitative solvency requirements

Source: RBSIF Drafting Group.

- 48. Supervisors usually look to the most sophisticated RBS regimes for reference, but their fitness for local implementation should be objectively assessed. The implementation of heavily sophisticated regulation without accounting for a jurisdiction's characteristics may end up stifling a nascent or simple insurance market. The regulatory environment needs to be proportional to the sophistication of the insurance market, financial markets, and industry and supervisory capabilities.
- 49. There may need to be a distinction between a medium-term project plan to improve regulatory requirements and a long-term strategy to achieve the most sophisticated practices. A benefit of separating medium-term project plans and long-term strategy is that the current supervisor management and government ministers can be accountable for the realistic goal in the project plan. The project plan could aim to move the jurisdiction along the sophistication continuum and reach a level commensurate with the planned development of the industry and supervisor while leaving further work to be done in the future to reach the ultimate goal. Staging of developments may also be a good way forward. For instance, implementing qualitative regulatory requirements such as ORSA may be a useful first step for the insurance sector and the supervisor to build the level of sophistication necessary for more advanced quantitative regulatory requirements. Examples of practical steps to implement an RBS regime are covered in more detail in Chapter 4.



#### 3.1 Economic conditions and activities

- 50. Sound and sustainable macroeconomic and financial sector policies are key considerations for implementing RBS. As insurers can be affected by macroeconomic and financial sector policies, it is important that the supervisor have a clear idea of the roles of the different bodies involved in financial stability and supervisory work and the impact that their policies could have on its RBS transition and vice versa.
- 51. The level of sophistication of macroeconomic and financial sector policies that lead to more stable economic outcomes will have an impact on the choices made in the design and calibration of the RBS regime, as well as the staging of the project plan for implementation. It may be difficult to calibrate the quantitative regulatory requirements in a jurisdiction that has frequent economic crises; more reliance on qualitative regulatory requirements may be appropriate in those circumstances. Additionally, in the event of an economic crisis, the insurance sector's management may be fully engaged in crisis management. Therefore, the timing of implementing new regulatory developments should consider such circumstances in order to avoid adding further strain.
- 52. Calibration of a sophisticated RBS regime relies on the ability to use data to determine the level of risk through statistical techniques. These techniques are most reliable when they are deployed using data observed in a stable economic and social environment. If a jurisdiction is emerging from a period of economic and social instability into a period of relative stability, then the period over which data is observed may need to be calibrated to that change in circumstances. As a practical example, relying primarily on data observed during the Great Financial Crisis of 2008–09 or the Asian currency crisis of 1998–9 may not result in a good calibration of financial market risks. If it is believed that economic and regulatory reforms have sufficiently reduced the likelihood of such episodes, then the data for calibrating the risk might not include these periods. If it is believed that similar crises are still possible at a similar frequency, then those episodes might be included in the calibration.
- 53. Practically, if a jurisdiction has recently experienced economic and social instability, it is likely that other considerations regarding the level of development of financial markets, development of the insurance sector and resourcing of the supervisor are also affected. An objective analysis of what is practically possible given those circumstances and whether implementing an RBS regime is a priority for the jurisdiction should be undertaken. A longer-term strategy as part of a plan to develop the jurisdiction's economy may be more appropriate than a medium-term project plan of reform for the implementation of RBS.
- 54. A well developed public infrastructure is an important consideration as it affects the effectiveness of insurance markets and supervision. Public infrastructure covers the legislative framework and judiciary, professional expertise in accounting and auditing, and data and statistics. Laws should be in place to govern the establishment and operation of insurers, insolvency proceedings and consumer protection, and the judiciary should be efficient and independent from undue influence. Also necessary is an independent auditing framework supported by skilled and competent professionals such as actuaries, accountants and auditors, acting in compliance with high ethical and technical standards so supervisors can reasonably rely on their work. Finally, with regard to data and statistics, the availability of reliable economic, financial and social statistics is important.
- 55. If a well developed public infrastructure is not in place, deficiencies should be considered in the design and calibration of the RBS regime. For example, if insurers operate under legal uncertainty due to a lack of a legislative framework governing insured assets and related activities, or if judicial outcomes are unpredictable, then this risk should be considered in the



design and calibration of an RBS regime. The additional risk in this type of environment compared with more advanced legal environments may need to be considered in the valuation of technical provisions, calibration of risk factors or other design considerations. Another example is if there is limited development of professional accountants and auditors; this may mean that less reliance can be placed on asset valuations or financial reporting. Additional safeguards and supervisory practices may need to be designed to address deficiencies. If there is a shortage of actuarial expertise in the jurisdiction, then the ability to develop a sophisticated RBS regime is likely limited and this shortage of actuarial expertise should be addressed in project plans and strategies for the implementation of an RBS regime.

#### 3.2 Financial markets

- 56. The level of development of financial markets can have significant impact on the scope, type and approach to implementation of an RBS regime in a given jurisdiction. Aspects such as market efficiency, market discipline and level of financial market development should be considered thoroughly in assessing the transition to RBS.
- 57. An efficient financial market can be an enabler for RBS implementation and can have implications for the type of quantitative regulatory requirement, notably the valuation method. An efficient financial market can be described as one in which asset prices fully reflect all available information and that is supported by well developed market infrastructure. Efficient financial markets are important to provide investment and risk management opportunities for insurers.
- 58. The level of market discipline<sup>8</sup> will have substantial impact on the design elements, especially those related to disclosure and corporate governance, as well as the approach to the transition. Sound market discipline can contribute to the effectiveness of regulation and supervision. In the absence of effective market discipline, insurers may be tempted to engage in unfair business practices and/or take excessive risk. Market discipline is inherently linked to people and behavioural issues, which supervisors have the capacity to influence through supervisory measures such as public disclosure and corporate governance requirements.
- 59. Issues of financial market development can inform the choice of quantitative solvency requirements. Financial market development is important as it promotes economic growth. Preconditions regarding the development of financial markets are not within the mandate of supervisors, but they do assist in assessing observance of ICPs. Supervisors should be aware of deficiencies in financial market development as these can have an impact on the effectiveness of supervision or the achievement of supervisory objectives. As financial markets develop, it is important to create measures to mitigate the macroeconomic risk factors that evolve. These risks may include increases in the volatility of asset prices, capital flows and macroeconomic conditions. The level of financial market development has an impact on monetary policy and financial stability in emerging markets. Nevertheless, financial market development is important as it provides the insurance sector with available investment opportunities to support the obligations inherent in increasingly sophisticated insurance contracts. In the absence of financial market development, asset valuation will be less certain as market prices cannot be observed

<sup>&</sup>lt;sup>8</sup> Market discipline in insurance refers to the influence that market participants, such as policyholders, investors and other stakeholders, exert on insurers so they operate efficiently, manage risks prudently and maintain transparency. This discipline is achieved through mechanisms like public disclosure requirements, which provide stakeholders with the information needed to make informed decisions and hold insurers accountable for their performance and risk management practices (Eling (2011)).



for assets in secondary markets. Diversification of assets will also be limited due to the unavailability of a range of assets to create a diversified investment portfolio.

#### 3.3 Demographics and cultural considerations

- 60. Supervisors should consider how demographic trends may affect the insurance sector, broader financial sector and economy over time.<sup>9</sup> An example of an event is Covid-19, which had serious health, social and economic implications, with some outcomes relatively straightforward and others as yet unknown. Examples of trends are an ageing population, particularly in Europe and Asia, and increasing urbanisation, leading to growing cities. Many EMDE countries have a relatively young population with a low median age. Young people have different insurance-related needs and often less knowledge of the risks they face in life and how insurance can help them navigate significant financial and health risks. Demographics will have an impact on insurance penetration in the market and the type of product that is demanded. For example, a young population may prioritise savings products, whereas with an ageing population, retirement benefit products such as annuities may become more dominant. The type of product and the design of products to meet the needs of the population will have a direct impact on the design of the quantitative requirements of RBS.
- 61. Culture refers to the attitudes, beliefs, behaviours and opinions of an individual or group of persons in society.<sup>10</sup> A good understanding of cultural context is essential in the transition to an RBS regime. Culture shapes the development and sophistication of the insurance sector by influencing how individuals and groups perceive, manage and mitigate risk. This cultural influence affects the demand for insurance products, customer expectations and the overall regulatory environment. For example, in traditional oriental cultures it is believed that talking about death or accidents is bad luck, while in many African cultures it is traditional to give loved ones a dignified funeral. In general, societies with higher levels of financial literacy and a more risk-aware culture tend to have a greater openness to sophisticated insurance products and advanced risk management strategies. Conversely, in general, cultures with lower financial literacy often have a preference for more straightforward, easily understandable insurance products and risk management strategies. Considering such cultural nuances is crucial when implementing an RBS regime, as jurisdictions with higher financial literacy and an advanced understanding of risk management can introduce more complex and risk sensitive solvency models. However, in regions where financial literacy is still developing, a simpler, more transparent approach is advisable. This might involve solvency requirements that are straightforward and focus on fundamental risk factors, ensuring that the regime is accessible and understandable to all involved parties.
- 62. Culture will also affect insurance penetration in a market and the range of products available in the market. Some cultures have traditions and beliefs that have mutual aid at the centre of their social structures. In such a society, insurance may have limited appeal and may be centred on commercial non-life business, with personal lines not prevalent. This will directly affect the design of RBS, as some risks that are typically addressed in RBS (eg health risks) will not be important in such a situation. In such a society, even as economic development occurs,

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<sup>&</sup>lt;sup>9</sup> Demographics is the study of a population based on factors such as age, gender, occupation, income, family status and education. Demographics are important to understand as changes are constantly occurring, driven by many factors and resulting in wide-ranging consequences. The pace and extent of demographic change may vary over time and be driven by major trends and unpredictable events.

<sup>&</sup>lt;sup>10</sup> In the context of insurance supervision, the IAIS defines corporate culture as "the set of norms, values, attitudes and behaviours of an insurer that characterises the way in which the insurer conducts its activities". See IAIS (2019b).



the usual parallel development of a more sophisticated insurance market may not. As a result, economic activities and financial markets may develop to sophisticated levels, while the insurance sector may not develop at the same pace. The RBS regime put in place should be fit for purpose, taking into account the current characteristics of the insurance sector and its likely development given the cultural context in which the sector operates.

- 63. Agrarian societies dominated by people working individual small parcels of land or in communities working larger parcels of land to produce food and other products to address basic needs will be unlikely to have sophisticated financial markets or a need for sophisticated insurance products.<sup>11</sup> Such societies are likely to be best served by microinsurance products. These will require an enabling regulatory and supervisory environment in order to flourish. A sophisticated RBS may stifle the development of a market for microinsurance products.
- 64. Language barriers, where relevant, should be considered when transitioning to an RBS regime. It is important that the language of the supervisory and supporting documents on transitioning to an RBS regime be the working language(s) of supervisors within a jurisdiction. The language skills needed for transitioning to an RBS regime should be considered, as they could potentially influence both the design and the transition process. Further, multilingual jurisdictions should also consider the impact of language diversity on the transition to an RBS regime. This is particularly pertinent in regions where several working languages are in use or where foreign languages are employed.

#### 3.4 Insurance sector

- 65. The nature, size and complexity of the insurance sector in a given jurisdiction will have a significant impact on the level of sophistication of the target RBS regime. Markets with a range of sophisticated life, non-life, long-term savings and annuity products; strong competition and supporting innovation will require an RBS regime capable of capturing risks more accurately and, therefore, it will also need to be more sophisticated. Other factors such as data availability and reliability, as well as industry capacity, will also influence the appropriate level of sophistication of the regime. Jurisdictions where data availability is limited and industry and supervisory capacity need further development may need to opt for a less sophisticated regime as an interim milestone and for a more sophisticated regime in the longer term.
- 66. From an industry perspective, it is important to consider the capacity to engage in such regulatory reform. Generally, human, financial and technological resources may be constraints for many jurisdictions, especially in EMDEs. This needs to be taken into account when determining the scope of the project and in the RBS design.
- 67. The supervisor should take into consideration the market maturity level in the early stage of project scoping and planning. Industry characteristics may affect the progress and outcome of the project. The supervisor should consult the industry to assess its level of preparedness and initiate outreach to insurers in order to invest in areas where there are gaps, for example in skills and knowledge, technology and budgeting for the costs of implementing RBS.
- 68. Protecting the interests of policyholders and their beneficiaries in the event of the winding-up of an insurer is a critical element of a regulatory regime. Regulatory regimes should be set up such that poorly managed insurers exit the market in an orderly manner, either voluntarily or involuntarily, and that policyholder interests are protected (as far as possible) under

<sup>&</sup>lt;sup>11</sup> See A2ii (2014).



such circumstances. Protection mechanisms may include a hierarchy of claims,<sup>12</sup> a policyholder protection scheme<sup>13</sup> and/or the establishment of statutory funds.<sup>14</sup> The existence of protection mechanisms and the manner in which they protect policyholders can influence the RBS regime.<sup>15</sup>

#### 3.4.1 Nature, size and complexity of the insurance market

- 69. The insurance industry's level of development is a critical factor that supervisors should carefully consider when designing and calibrating RBS regimes. Different levels of development are characterised by unique attributes and associated risks, and therefore a nuanced and context-specific approach to RBS is essential. These levels may range from emerging and developing markets with low insurance adoption to mature markets with high insurance coverage.
- 70. Mature or developed markets are marked by intense competition among numerous insurance providers. These markets typically have a diverse range of insurance products and services, well established regulatory frameworks, diverse distribution channels, balanced risk pools, high consumer awareness, high market efficiency and global integration, resulting in a competitive landscape. Price competition, commoditisation of insurance products, potential underwriting risks due to aggressive market strategies, interest rate sensitivity, consumer choice overload, regulatory compliance burdens and moral hazard are some notable risks observed in these markets.
- 71. Conversely, emerging and developing markets may be characterised by limited competition, often marked by a scarcity of insurance providers and significant barriers to entry. These markets typically exhibit a concentration of market share among a few dominant players. The range of available products is often narrow, innovation is stifled, consumer awareness is low, government-run risk pools carry higher risks, distribution channels are limited, and insurance premiums tend to be higher due to lower price competition.
- 72. Assessing the insurance industry's developmental stage and identifying the various characteristics and risks exhibited at the outset of the project is a critical step when considering a transition to an RBS regime. This assessment informs supervisors about the specific areas that may need to be addressed. It enables supervisors to map their initial position on the RBS regulatory regime and risk sensitivity spectrum, offering valuable insights into the type of RBS regime that may be suitable (see Figure 3). Furthermore, it helps yield a more precise understanding of which elements of the RBS regime require greater focus and priority.
- 73. Another way of looking at RBS development might be to focus on qualitative requirements like ORSA in order to develop greater sophistication in risk management and governance in order to create the conditions for more sophisticated quantitative solvency requirements. Sophisticated quantitative solvency requirements demand sophisticated risk management, data acquisition and analysis. One way of seeding this development may be through a programme of increasingly sophisticated qualitative requirements that then creates the conditions in which a more sophisticated quantitative solvency requirement might be implemented.

<sup>&</sup>lt;sup>12</sup> See ICP 12.9.

<sup>&</sup>lt;sup>13</sup> See IAIS (2023b).

<sup>&</sup>lt;sup>14</sup> Established through regulatory requirements for insurers to hold segregated funds for specific types of insurance business or specific policies.

<sup>&</sup>lt;sup>15</sup> For an overview of global practices regarding PPSs, see IAIS (2023b).



- 74. In emerging and developing markets, quantitative requirements may take precedence in order to ensure that insurers maintain adequate capital buffers to absorb unforeseen shocks and risks. Supervisors may initially emphasise basic capital standards that ensure solvency without imposing excessive burdens on insurers. Simpler and more straightforward formulas or factors for calculating capital requirements may be adopted, as this accommodates the evolving nature of the insurance market. In addition, the focus may also be on helping insurers to establish basic qualitative risk management processes, encouraging them to develop risk management policies, build risk awareness and gradually enhance their governance structures as their capabilities grow.
- 75. The level of competition and concentration should also be carefully considered in determining the scope and designing the project plan for implementation of RBS. Indicators such as insurers' market share and the Herfindahl index<sup>16</sup> can provide supervisors with reference points. The IMF's *Financial Soundness Indicators Compilation Guide*<sup>17</sup> offers examples on calculating competition and concentration measures. A highly concentrated industry with one or a small number of large insurers may benefit from a more sophisticated RBS for those large insurers and a proportionate implementation for smaller insurers operating in that market.

#### 3.4.2 Data availability

76. Data plays a critical role in the development and implementation of an RBS regime, as it supports risk assessment and management, including capital requirements commensurate with the risk of the insurer. Supervisory tools and processes such as early warning systems, off-site monitoring and the overall calibration of solvency regimes rely on the availability of timely and reliable data. Jurisdictions where access to data is limited and data systems are not advanced may consider developing data and technology capabilities as one of the initial steps in their transition towards RBS.

#### 3.4.3 Resources

- 77. One of the primary financial considerations when transitioning to an RBS regime is the initial investment required. Both insurers and supervisors will need to allocate resources efficiently due to the significant changes in regulatory and supervisory processes, risk assessment methodologies and reporting requirements during the transition. This encompasses funding for overhauling technology infrastructure to support risk assessment, solvency measurement and regulatory compliance. It also involves the enhancement of data management capabilities, including investments in data warehouses, data quality control measures and data governance frameworks. Furthermore, considerations should also encompass compliance-related expenses, such as those linked to regulatory reporting, auditing and compliance monitoring.
- 78. In addition to these financial considerations, there is a crucial need to focus on building the relevant skills and expertise to support the operationalisation of an RBS regime. Specifically, emphasis should be placed on acquiring or building expertise in actuarial and risk

<sup>&</sup>lt;sup>16</sup> IMF (2019) defines the Herfindahl index as a measure used to assess market concentration and competition within a sector. It is calculated by squaring the market share of each firm operating in the market and then summing these squared values. The index ranges from 0 to 10,000, where a higher value indicates greater concentration and less competition, and a lower value suggests a more competitive market with a greater number of firms.

<sup>&</sup>lt;sup>17</sup> IMF (2019) provides methodological guidance on the concepts and definitions and data sources and methods for the compilation and dissemination of financial soundness indicators such as concentration and distribution measures for the financial sector, including for insurers.



management functions. This capacity-building effort should include a focus on developing and nurturing a pool of skilled actuaries capable of effectively handling risk modelling and solvency calculations, both within the supervisor and within insurers. Insurers should allocate financial resources to enhance their risk management practices, which may include developing risk models, bolstering stress testing capabilities and implementing effective risk mitigation strategies.

- 79. In line with the cultural and technical transformation of the insurance sector, there is likely a range of new skillsets that insurers will need to acquire in order to fully implement RBS. Already covered are actuarial and risk management functions. However, in support of those functions there is likely a need to upgrade IT systems so that relevant data can be processed and appropriate software can be introduced. This may require more IT professionals with sophisticated skills to implement the required hardware and software upgrades and to maintain those systems. Data for RBS calculations is usually drawn from both actuarial and accounting systems. There may also be concurrent changes in accounting due to developments like International Financial Reporting Standard (IFRS) 17. As a result, accounting skills will need to be commensurate with the new demands of RBS and modern accounting standards. Not only are these skills required, but actuarial, risk management, accounting and IT functions will need to be able to work in an integrated way in order to deliver the necessary data for full RBS implementation.
- 80. The success of a transition to an RBS regime is dependent on how well stakeholders adopt and correctly use the data and information provided by the new framework. Training of stakeholders (including the governance structures of insurers) is a valuable tool for promoting an RBS regime and ensuring stakeholders are well informed in order to make optimal decisions. Throughout the transition, multiple resources, such as project staff, customised tools and documents, will be developed. Retaining these resources will be important for the successful implementation of an RBS regime.

#### 3.5 The supervisor

- 81. **Moving to RBS requires cultural, structural and operational changes at the supervisor.** Implementing RBS means implementing a different way of conducting supervision. Familiar processes and procedures may no longer be relevant, leaving some supervisory staff feeling ill at ease and wondering what their role will be in the future. An RBS project is an exercise in transforming the supervisor that can and should take time. A focus on change management is vital to a successful project.
- 82. An objective analysis of the skills, capabilities and infrastructure of the supervisor is a critical early step in deciding whether to launch an RBS project and what the target level of sophistication will be. The supervisor will be a different organisation at the end of the RBS project compared with when it started the project. It is likely that people with different skillsets will need to be hired, existing staff will need to undergo further training and internal systems will need to be upgraded. All these changes need to be managed thoughtfully and purposefully with the goal of implementation in mind.
- 83. The implementation of RBS requires that the supervisor's budget be increased or savings found in other activities. The existing solvency requirements and existing supervision and approval processes need to continue alongside the development of the RBS regime. The supervisor needs to continue to meet its mandate alongside resourcing what is likely to be a medium- to long-term project. A supervisor with a handful of staff, no matter how skilled and committed, will not be able to sustain a successful RBS project. Therefore, the decision to launch



an RBS project should include a decision to appropriately budget for the project for its entire expected term.

84. If a supervisor is unable to obtain the necessary resources to launch an RBS project while maintaining its necessary current supervisory activities, then launching the project should be postponed until those resources can be obtained and sustained. Although supervisory resources can be used to save costs, this approach carries the risk of not meeting current supervisory objectives. Supervisors relying on government funding will need to ensure government support for any budget increases. This is one aspect where government buy-in will be crucial (see Chapter 4).

#### 3.5.1 Culture and change management

- 85. The supervisor will likely need to go through a paradigm shift in its organisational structure in order to effectively adopt an RBS regime. An RBS regime encourages a culture of risk management that entirely differs from a compliance approach. While some supervisors may show resistance to the cultural change, the organisation's leadership will play a vital role in fostering skills and behaviours that are vital to RBS.
- 86. Strong leadership that can instil a sound culture and mindset is required. Clear and continuous communication is necessary when transitioning to RBS. This will show that the supervisory leadership is committed to the project, and it alleviates concerns within the authority.

#### 3.5.2 People

#### 3.5.2.1 Skills and expertise

- 87. The shift towards an RBS regime inherently implies a need for increased resources to manage the complexity associated with risk assessment and solvency calculations. For a supervisor contemplating the adoption of an RBS regime, one of the most crucial elements to consider is the resource implications associated with this transition. Supervisors may need to continuously strengthen and enhance the abilities, knowledge, skills and resources of both the supervisor and the industry in order to ensure a successful transition and eventual implementation of an RBS regime.
- 88. An objective analysis of the supervisor's capabilities needs to be carried out before the project launches. This is critical to identify gaps in knowledge and infrastructure needed to undertake the project and to supervise the RBS regime once it is implemented. To provide an extreme example, it would not be wise to aim to implement an RBS regime built around standard or internal models if there are no plans to employ staff who could leverage actuarial skills, such as actuaries, statisticians or economists, within the authority. There needs to be a realistic assessment of how the supervisor can build its skills and capabilities over the life of the project in order to be able to manage the project successfully, as well as ultimately supervise insurers according to the new RBS regime.
- 89. A diverse set of skills is needed. It may be that some or all of those skills are found within the supervisor's existing staff, but there may be a need to increase the pool of expertise and add some specialists with experience. The supervisor will need professionals such as financial analysts, actuaries, accountants, lawyers, IT professionals and project management specialists to ensure successful completion of the project and transition to everyday supervision.
- 90. **The design, calibration and implementation of an RBS regime will require actuarial input.** Actuarial capacity is one of the key skillsets required for development of RBS. It is important to have access to actuarial capacity throughout all phases of the project. The number of actuaries needed will vary with the complexity of the project. Actuaries also have different specialties, so



it is important to consider access to actuaries with the necessary range of specialist skills (such as those with experience in the life industry versus those experienced in the non-life industry). In jurisdictions without an established actuarial profession, the supervisor should consider as part of the project plan the need to develop a nascent actuarial profession and employ actuaries once they qualify.

- 91. An initial lack of actuarial expertise can be dealt with in different ways over time. One way is to use consultants, particularly early in the project. However, this does require those consultants to be managed by supervisory staff with enough knowledge to be able to challenge the input being received from the consultants. The consultants can be used in conjunction with staff who have complementary skillsets, such as statisticians, economists and finance professionals. A staff development programme to allow existing supervisors with complementary skills to qualify as actuaries may be a medium-term way forward. Actuaries can be hired from the insurance industry, consulting firms or other sources and may need to be brought in from foreign countries if there is a lack of local expertise. However, one issue may be that traditional remuneration levels for the supervisor's staff may not be enough to attract actuaries and other necessary professionals. Any restrictions on remuneration of public employees may need to be addressed early in the project to ensure sufficient expertise can be maintained. It is not desirable, in the long term, to institutionalise the use of consultants to plug gaps in supervisory staff expertise. Therefore, the use of consultants should consider appropriate transfer of knowledge to the supervisor's staff.
- 92. As inputs for an RBS regime often come from accounting systems, having accounting expertise available is important. Adopting an RBS regime will require aligning existing accounting methods and practices to support valuation and reporting in the RBS regime.<sup>18</sup> The asset side of an RBS balance sheet will often use accounting inputs either directly or with simple adjustments. With the implementation of IFRS 17, it is more likely that integrated systems will be developed for the dual purposes of accounting related to insurance contracts and input into the RBS balance sheet, especially regarding technical provisions. Even if IFRS 17-based inputs are not directly used, it is highly likely that systems built to produce IFRS 17-compliant insurance contract liability figures will be usable for RBS purposes. In EMDEs, there is likely a strong need to reduce the regulatory burden by avoiding the duplication of systems; therefore, understanding of what can be produced from an IFRS 17-compliant accounting system will be highly valuable.<sup>19</sup>
- 93. No change in a regulatory regime can be achieved without the input of legal experts. Legal experts will be needed to draft legislation and statutory instruments to ensure that the RBS regime is legally enforceable. Therefore, any project team will need access to legal expertise, either directly within the project team or by agreement with the legal department of the supervisor that significant legal resources will be allocated to the project. These resources may also come from other parts of the government. For example, some governments may maintain a legislative drafting department that will need to be briefed in order to draft the necessary legislation.<sup>20</sup>
- 94. In creating an RBS project team, existing staff may need to be reassigned and/or new staff may need to be recruited. The more complex and sophisticated the anticipated RBS is, the more people and diversity of skills and experience will be needed. Setting up a project team is covered in more detail in Chapter 4. However, what is important to note here is that the initial

<sup>&</sup>lt;sup>18</sup> This alignment could include intermediary milestones, such as the use of local accounting standards during a transition phase (as performed regarding IFRS 4 Phase 1).

<sup>&</sup>lt;sup>19</sup> The implementation of IFRS in EMDEs is often comprehensive and applies to small and large insurers.

<sup>&</sup>lt;sup>20</sup> Liaising with legal drafters is often done by the supervisor's lawyers because they understand the needs of the legislative drafters.



project team is likely to evolve and grow over time as the project progresses through different phases. The impact of the project on other activities of the supervisor needs to be considered by the supervisor's executives.

95. Another key skillset is project management skills. Many supervisors may not have these skills with their staff at the outset of the project. As the RBS project is a complex, multifaceted one, the use of experienced project management professionals, as well as staff training on project management, will be important to success. Less ambitious projects may be able to be managed by staff who have project management training, but the more ambitious the project the more likely professional project management staff will significantly enhance the ability to deliver the project in a timely way.

#### 3.5.2.2 Skills retention

- 96. The transition to an RBS regime is usually a long journey, and it will be necessary to try to retain the many and varied resources built up during this time. The retention of these resources is necessary to sustain the implementation of the RBS regime, secure the embedding of the RBS regime within the supervisor and ensure the success of the project.
- 97. Large projects often include a post-implementation development phase.<sup>21</sup> Due to the inherent complexities of large projects and what is often the need to implement parts of the project in phases as and when they are finalised, the transition to an RBS regime could possibly include a post-implementation development phase. The retention of resources would be an imperative to retain the momentum and continuity to assist in the success of the matters still to be finalised.
- 98. The supervisor (and industry) should have clear plans on how to retain human resources. Handover and retention incentives should be discussed with the relevant staff early on in the project. Knowledge management will also be key: a database of the tools developed throughout the project should be set up, with clear descriptions of how such tools could be used, in order to support smooth handover in the event of turnover in the project team.
- 99. Project fatigue is a common risk for large projects, and resource retention should incorporate a mitigation of such a risk. Staff involved in large projects can be at risk of fatigue that could lead to the loss of essential resources if they opt to leave the project. The supervisor (and industry) should include ways to counter such fatigue in retention plans. Celebrating small wins, milestone incentives, and planned and executed project breaks are some examples.

#### 3.5.2.2.1 Training

100. The transition to an RBS regime can often be far-reaching depending on how much it differs from the previous framework. Training of supervisory staff and stakeholders throughout the project can help bridge this gap. Training when the project commences can create awareness about the idea of the regime change and the benefits it could have. This helps to secure initial involvement in the project and the commitment of the necessary resources to support a strong start. Regular training helps any new stakeholders become part of the project and helps with taking existing stakeholders on the journey of transition. This can be used as a platform to highlight any changes and developments. Regular training can be kept short and simple. Some RBS concepts are complex or are often more complex in practice than in theory. Repeated training can help to embed the principles and ensure stakeholders are kept up to date, while also

<sup>&</sup>lt;sup>21</sup> The post-implementation phase is usually the final stage of the project, where the newly implemented regime is in operation. This phase involves continuous monitoring and evaluation of the new regime to ensure it is functioning as intended and is achieving the desired results.



supporting continued stakeholder involvement in and commitment to the project. A repository of training material is a valuable asset to facilitate repeated training of supervisors and relevant stakeholders.

- 101. Training also supports a two-way flow of communication; it creates an opportunity for feedback about the project and the RBS regime. Feedback from participants (non-project members from the supervisor and stakeholders) can be very valuable and allow the project team to improve and enhance the development of the project.
- 102. The training programme should cover as much of the project as possible. This can include new information to highlight changes to the project and to show progress. It can also create a platform for responses to queries and suggestions by stakeholders. The training programme can include complex areas like the ORSA. The training programme can also cover the analysis of data from field testing and the information it provides about appropriate design of the RBS. As the transition will require the development of new supervisory tools and processes, the training programme can also be used to introduce these new tools and processes and demonstrate the functionalities and/or workings thereof. Lastly, training can also facilitate a better understanding, for both supervisory staff and insurers, of new legislative requirements.
- 103. The training programme should cover as many stakeholders as possible to ensure alignment and common understanding. These stakeholders will include staff, senior management of the supervisor, insurers, insurance intermediaries, professionals such as auditors and actuaries, and potentially also the investor community.<sup>22</sup> For both the supervisor and the insurer, the training should be offered to a wider audience than just the technical staff directly involved in the project. The investor community may not need detailed training on the technical aspects of the RBS; the focus will likely be more on how information generated by the regulatory framework has changed. Providing training to the investor community may be a joint effort with the industry.

#### 3.5.3 Systems and organisational structures

- 104. An RBS project and the post-implementation phase of RBS often require significant IT upgrades and access to the necessary IT professionals. Investment in IT infrastructure will likely be an important aspect of an RBS project. Stable databases will need to be created to store the data necessary for the calibration of components of the RBS. Access to and expertise in operating statistical software packages will be necessary so the data can be analysed and used for calibration. Any implementation of RBS will involve a significant upgrade and change to the nature of supervisory reporting. The supervisor will need to plan to have the necessary systems in place to be able to effectively process the reporting and make supervisory assessments. To give an extreme example, a supervisor currently relying on paper-based reporting or simple spreadsheet file reporting will need to consider how much it can invest to upgrade this simple reporting environment. An objective assessment may indicate that, in the medium-term, a less sophisticated RBS regime would be appropriate given the likely IT infrastructure available at the end of the project.
- 105. The implementation of an RBS regime will necessitate changes to the organisational structure of supervisors, focusing primarily on the enhancement of technical and risk expertise within the supervisor. This typically involves the establishment or expansion of dedicated departments/units. The shift will also require moving away from a reliance on compliance-focused skills, as the implementation of an RBS regime requires an understanding

<sup>&</sup>lt;sup>22</sup> The investor community can include analysts from asset managers, rating agencies, reporters and companies in business with the insurance industry.



of risk and risk management. Consequently, supervisors will need to invest in developing specialised skills and resources (see Section 3.5.2.2.1).

#### 3.6 Choosing the type of RBS regime

- 106.ICP 17.1 stipulates that the supervisor requires a total balance sheet approach in the assessment of solvency to recognise the interdependence between assets, liabilities, regulatory capital requirements and capital resources and to require that risks are appropriately recognised. In order for a jurisdiction to be observant/largely or partially observant of this ICP standard, it will need to consider a transition away from simple solvency standards to a more risk-sensitive solvency regime (as illustrated in Figure 2).
- 107. Less sophisticated solvency regimes could offer some advantages because of their simplicity and relative ease of implementation, but they also present some limitations. For example, if the calculation of the regulatory capital requirement is done on a flat rate basis, it ignores the differences between product portfolios and investment portfolios across insurers ie it does not consider the varying risks to which insurers may be exposed. As a result, insurers with similar reserves but different risk exposures will have the same regulatory capital requirement.

	Simple solvency standards	RBS
Equity	- Capital requirements according to activity and insurance reserves	- Capital requirements based on financial and other risks
	- Equity capital from an accounting perspective with a partial and smoothed impact of market variations	- Capital depends on the valuation of assets and liabilities undertaken on consistent bases (ICP 14.2), and the valuation of assets and liabilities is an economic valuation (ICP 14.4) <sup>23</sup>
Assets	- Prescriptive standards as to what assets an insurer can invest in along with limits on certain asset classes	- A principle of freedom of investment with risk-taking reflected in capital requirements. Freedom of investment requires an increase in accountability via governance and risk management requirements related to investments. There should be a clear risk appetite statement and management of risks in accordance with that risk appetite.
Liabilities	- Technical provisions calculated at the "tariff rate", at a prudent level	- Best estimates calculated in fair value updated with the market rate curve
	- Charges for expenses	<ul> <li>A risk margin</li> <li>Actual and expected costs</li> <li>Freedom to price according to risk without regulatory approval</li> </ul>

#### Table 1: Key differences between a simple solvency standards regime and the RBS regime

<sup>&</sup>lt;sup>23</sup> When considering risks related to asset value in the construction of the capital requirements component of an RBS, the important consideration about valuation is the risk that capital from the realisable value of assets in stressed conditions is less than the carrying value in the balance sheet. In EMDEs where secondary capital markets may not provide reliable estimates of realisable value, market valuation may be challenging, and amortised cost or historical cost valuation may be appropriate if it is possible to assess quantitatively how likely this is to overstate the realisable value of assets in a stressed situation.



	Simple solvency standards	RBS
Reporting	Reporting requirements specific to the limitations specified in regulations	Reporting built around quantitative capital requirements (and the granularity of the calculation) and qualitative requirements (eg ORSA and specification of the ORSA and governance requirements). It is important that reporting requirements be tailored to the RBS quantitative and qualitative components so that supervisors can conduct off-site analysis effectively.

- 108. The model chosen should consider all the factors covered in this chapter. It is also important to note that even where a jurisdiction decides to implement a model already implemented in another jurisdiction, this should not be a simple "plug and play", but rather any model adopted needs to be refined and tweaked to be appropriate for the jurisdiction in which it is implemented.
- 109. A transition process or a maturity process over time can assist in moving from a simple solvency regime to a more sophisticated and complex RBS regime. In plotting its level of preparedness using Figure 3, a jurisdiction can form a baseline and decide its end destination. This might be a long journey, but supervisors should not be discouraged; milestones can be developed throughout the journey to build towards the end goal. The order of the milestones might be different from that in other jurisdictions (it should be set to suit the jurisdiction and its dynamics). Milestones can be set to ensure progressive realisation of requirements. Chapter 4 will demonstrate options of paths to follow in the transition journey.

## 4 Practical aspects of implementing an RBS regime

- 110. This chapter covers the practical aspects of implementing an RBS regime through the project startup phase, setting up an RBS implementation project plan and designing the project. These three components are depicted in Figure 4 below. This chapter also covers other practical considerations such as engaging stakeholders and securing support from policymakers. For general matters on project management, please refer to the specialised literature on project management.
- 111. **Implementing an RBS regime is not a short-term undertaking.** Depending on the baseline and the transition required to reach the target regime, implementing an RBS regime will be a medium- to long-term project. Careful planning is therefore very important, recognising that adjustments to project timelines and/or milestones may be needed over time.
- 112. The initial project plan and iterations will provide a benchmark against which the performance of the project manager and project team can be assessed. Strong project governance is required to ensure accountability and credibility. Engaging stakeholders both internally and externally on the status of the project, including the risks and challenges and any adjustments needed, would reflect transparency. These elements of a project plan are critical in securing buy-in from relevant stakeholders, including policymakers.



Figure 4: Project components



Source: RBSIF Drafting Group.

#### 4.1 **Project startup phase**

113. Getting a project off the ground can be the most critical phase, in which the continuation of the project is most at risk. Some aspects to consider in the project startup phase are depicted in Figure 5 below.

Figure 5: Activities in the project startup phase



Source: RBSIF Drafting Group.

#### 4.1.1 Defining the scope of the project

114. The project startup phase begins with defining the scope of the project. The objective analysis of the scope has been covered in Chapter 3. This entails identifying the gaps and limitations of the baseline regime and a realistic assessment of the target regime; the



circumstances of the environment in which the RBS regime exists will be the foundation of a successful project.

- 115. Defining the scope of the project will include a description of the scope of the project; the key milestones, including interim and final deliverables; the exclusions and the constraints. In defining the scope, it is important to apply the principle of proportionality in that reforms should reflect the reality and specificities of the market. Defining milestones provides a clear direction that can be shared with stakeholders and that can allow for consultation and exchange periods in order to make the necessary adjustments. Mapping key stakeholders is a critical step in the project startup phase (see Section 4.4).
- 116.A well defined scope should provide the basis for securing support from relevant stakeholders. The scope should set objectives in order to assess progress and provide consistent messaging for communication with internal and external stakeholders. A well defined scope should also provide technical clarity for the target regime, including risks covered by and sensitivity of the target RBS regime.

#### 4.1.2 Endorsement by Executive of Supervisory Authority

- 117. A successful transition to RBS requires buy-in from all parts of the supervisor. Senior management buy-in plays a key role in sponsoring and driving a transition to RBS.
- 118. Senior management needs to be a significant driving force behind the project and will be responsible for the direction and governance of the project at a macro level. Senior management should provide strategic direction to the project team and assess progress and provide guidance for addressing challenges. Endorsement from senior management can follow a top-down approach, with senior management setting the tone from the top. Alternatively, a bottom-up approach, where technical staff are presenting the benefits and costs associated with implementation, can also contribute to securing senior management support.
- 119. If the project is a bottom-up initiative, it is advisable to take the necessary actions to involve senior management and secure their approval and support. To get their support, it might be helpful for supervisory teams to engage in different actions such as providing explanatory briefings, organising information sessions and trainings for executives, and liaising and exchanging with other supervisors with similar experiences. The latter is particularly relevant for supranational regimes, as it can help ensure harmonisation of regulatory approaches across member states and support a level playing field within the region.



# Box 3: Jurisdictional experience – Securing senior management support: top-down vs bottom-up

#### Peru – Setting the tone from the top

The implementation of risk-based capital (RBC) in Peru followed a top-down approach. The Superintendencia de Banca, Seguros y Administradoras de Fondos de Pensiones (SBS)'s Committee for Financial Regulation and Standards played a key role in providing a clear shared view on the scope of and approach to the implementation.

The SBS' Committee for Financial Regulation and Standards developed a five-year roadmap setting out strategic planning, including project team structure, and assessing the necessary preconditions for the transition, informed by the nature size and complexity of the risks and market.

The committee would review and adjust the strategic plan on an annual basis.

#### Brazil – Building strong foundations for the transition

The Superintendência de Seguros Privados (SUSEP) adopted a bottom-up approach in securing senior management support for kickstarting the transition towards RBS.

A thorough scrutiny and strong understanding of international standards and evidence from experiences by other jurisdictions, supported by research on the benefits and associated costs of implementation, provided the foundations for securing senior management and stakeholders support for the transition.

The work carried out by the technical staff facilitated regular engagements with senior executives and helped inform the design of the transition project. Regular engagements were also held with the insurance industry and other relevant stakeholders.

- 120. Senior management sponsorship of the transition is essential. A strong senior sponsor (either one or more officials representing the highest governance structures within the supervisor) is necessary for internal buy-in of the transition. Internal buy-in is critical as the transition to an RBS regime requires a shift in mindset and changes to supervisory practices. Senior management sponsorship can support change management, notably if there is reticence to change. It is advisable to have a separation between the sponsor and the person responsible for day-to-day supervision.
- 121. At the senior management level, the sponsor can help ensure that adequate time and resources are allocated to the project. The sponsor can help ensure that senior management is regularly updated on the RBS regime's implementation. This, in turn, can help address obstacles and challenges, especially by facilitating senior management's decisions around allocating adequate resources to the implementation of an RBS regime.
- 122. The sponsor should be the spokesperson engaging with internal and external stakeholders. The sponsor should keep internal stakeholders informed about the status of the project to ensure continued support over the project lifetime. The sponsor should also lead conversations with external stakeholders like the government, industry and other relevant stakeholders to secure support for the project.


#### 4.1.3 Endorsement by government<sup>24</sup>

- 123. ICP 2 (Supervisor) requires that the supervisor be operationally independent, accountable and transparent in the exercise of its responsibilities and powers, and have adequate resources to discharge its responsibilities. The implementation of an RBS regime will require funding. If the supervisor receives its funding from the government, engaging with government will be necessary. In some cases, the supervisor may have direct influence on its funding through levies on the industry; however, any changes in levies would benefit from prior engagement with government.
- 124. Direct endorsement by government might not be required at the beginning, but briefing the relevant government officials on the project (eg on the scope, key milestones and timeline) at an early stage would be advisable. At a minimum, the relevant government minister should be briefed. Political engagement across the political spectrum would be useful considering the long-term nature of the project, as it may be that a different government will be in place as the project proceeds through key stages. Usually, the implementation of an RBS regime will require a change in legislation; therefore, endorsement of the government will be required for an effective implementation.
- 125. Industry can also bilaterally engage with government during the project. The insurance industry may, if not in agreement with the proposed RBS regime or parts thereof, engage with government and lobby it to intervene. A well briefed government minister can engage thoughtfully in any discussion brought by industry lobbyists.
- 126. **Some jurisdictions may also need to seek endorsement from supranational institutions.** Economic unions such as the EU play a central role in the development and implementation of financial sector regulations at the domestic level (eg Solvency II), including the participation and endorsement of several supranational institutions within the EU, namely, the European Commission, the Council of the EU, the European Parliament and the European Insurance and Occupational Pensions Authority (EIOPA). Members of such an economic union are required to follow the union's regulatory regime and to implement said regime within their national legislation.<sup>25</sup>

#### 4.1.4 Establishment of the project team

- 127. To implement an RBS regime successfully and efficiently, it is advisable to designate a dedicated full-time project manager. The project manager will act as the central point for the project and will be responsible for the management of the project from start to end. The project manager should have the adequate seniority and support from the senior management to lead the project and manage resources in an effective and timely manner for completing the project. The project manager will also be responsible for reporting to other management bodies involved in the oversight of the implementation of the project.
- 128.A dedicated core project team with appropriate skills, resources and commitment is necessary to initiate the transition towards an RBS regime. The structure and organisation should respond to the needs and particularities of the project and the jurisdiction. It is recommended that, to the extent possible, the project team be separate from the usual day-to-

<sup>&</sup>lt;sup>24</sup> This may apply not only to national governments, but in certain cases, may apply to supranational bodies.

<sup>&</sup>lt;sup>25</sup> Solvency II is a comprehensive regulatory regime for insurers operating within the EU, and it is legally binding on all EU member states. The framework was adopted through a directive (Directive 2009/138/EC) of the European Parliament and of the Council, which means that it must be transposed into the national legislation of each member state, as well as a series of regulations which are directly applicable within all EU Member States (Delegated Regulation (EU) 2015/35 and other technical standards).



day supervisory work. This separation will allow for dedicated focus and preserve the usual relationships between insurers and the supervisory team.

- 129. During the project startup phase, the project team can be small. A small internal project team would be able to scope the project and develop the key milestones and the timelines. The project team can be extended and changed over the life of the project to fit the key deliverables and the skills and knowledge needed. This initial project team can therefore also work on the resources needed to complete the project and the sources of such resources. These resources can be internal within the supervisor or sourced externally from other supervisors (through secondment) or industry. When using external experts, independence and objectivity is key. It is critical that adequate arrangements also be put in place to ensure transfer of knowledge to the supervisor during the project.
- 130. During the life of the project, the project team can be extended and can be comprised of specialised committees and/or working groups. If specialised committees or working groups are established, it is important that people with the relevant skills and expertise be appointed. The necessary arrangements should also be in place to ensure knowledge-sharing between the working groups and supervisory staff.
- 131. There are several reasons why different working groups or specialised committees are needed. The reasons include:
  - Specialised expertise: Complex projects such as implementing an RBS regime require specialised skills in different areas. For example, each working group might be responsible for design, programming, resource management etc. Segregating expertise according to risk (eg life, non-life, investments etc) is also important.
  - Effective collaboration: Dividing a project into several working groups can encourage collaboration across groups. This will require effective communication and coordination across the working groups. This results in better distribution of responsibilities and more efficient execution of the project as a whole.
  - Time and resource management: The implementation of different working groups can facilitate time and resource management. This can optimise the use of available resources and enables each group's progress to be monitored more accurately.
  - Risk reduction: Dividing up responsibilities can reduce the risks associated with dependence on a single team or individual. This can help mitigate the impact of potential problems with the project.
  - Complementary skills: Members of each working group may have complementary skills and experience. By working together, they can exchange knowledge, share ideas and solve problems collaboratively. This diversity of skills fosters innovation and makes it possible to approach the project's challenges from different angles.

#### 4.1.5 Project governance structure

132. A strong and agile project governance will support an effective transition to an RBS regime. Project governance facilitates identification of roles and responsibilities and supports risk management and efficient resource allocation. Good governance also promotes transparency, sets quality standards and provides a framework for continuous improvement. The project governance structure should be set out by the project plan (see Section 4.2).



#### Box 4: Jurisdictional experience – Setting up a project team

#### Morocco

The Supervisory Authority of Insurance and Social Welfare (ACAPS) structured its RBS implementation project team through a committee and working group system as follows:

- An RBS steering committee is responsible for the overall RBS project and establishing the stakeholder engagement strategy, including internal and external stakeholders.
- A technical committee (Tech Co) is responsible for operationalising the project and supervising the work of the working groups and ensuring that progress and resourcing are aligned with the project plan. Following the communication strategy plan built by the steering committee, the Tech Co sets up, with the communication team of the supervisor, the appropriate outreach activities at the different key stages of the project.
- A range of working groups support the Tech Co to ensure the appropriate operational management of the RBS project, including the key elements of the target solvency regime, eg quantitative requirements, governance requirements, ORSA etc. The scope of work and composition of working groups is likely to change over time depending on the stage of the project. The scheme below shows an example of the steering bodies and the architecture of the committees/working groups:





#### 4.1.6 Formal launch of project

133. Formal launch of a project is often the public starting point of the project, and stakeholders measure and assess project timelines from this point forward. Significant work and time might go into the project startup phase before the project can formally be launched. The formal launch will be the first formal involvement of the insurance sector and other stakeholders. It will set out how the supervisor intends to engage with stakeholders going forward, what the objectives of the project are, the timelines and the key milestones. Being clear about these aspects creates accountability and will frame stakeholder engagement going forward. Many stakeholders may be aware of aspects of the project or even the entire project through previous informal engagement. However, this project launch will formally provide a record against which progress can be compared.

#### Box 5: Jurisdictional experience – Considerations for implementing RBC

#### Peru

Preconditions for implementing RBC in Peru:

- Dealing with cross-cutting regulation;
- Involvement from the industry;
- Institutional transformation and buy-in from management; and
- Building capacity and appropriate infrastructure and increasing the availability of actuaries.

The SBS supervises banks, insurers and pensions funds; therefore, one of the key preconditions was the need to deal with cross-cutting regulation. Furthermore, the supervisor recognised the need to enhance the robustness of its regulatory regime and address the shortcomings in the current regime (ie Solvency I), which was not sensitive enough to the risk faced by insurers.

The implementation of RBC in Peru was initiated in 2008 and involved several stages. As a starting point, the SBS considered the elements of existing regimes, such as Solvency II and the SST, in the design of its regime. This was followed by initial engagements with the industry to replicate some of the elements of Solvency II, the development of a more comprehensive capital framework from 2017 to 2019, and two quantitative impact studies (QIS). Involvement of the industry across the different stages and support from the supervisor, eg by developing excel templates and video tutorials, played a key role in enabling progress.

Another key precondition for the transition was institutional transformation and buy-in from management. The Financial Regulation Standards Committee (CERF) at SBS played a key role in setting preconditions and a five-year roadmap that was regularly reviewed by the committee. Senior management buy-in supports the continuity of the project and availability of resources for the transition. Finally, building supervisory capacity, acquiring appropriate infrastructure (eg computer tools and databases) and increasing availability of qualified actuaries were among the key preconditions for the transition.

## 4.2 Components of a project plan

134. A project plan has some key components that are all required for the project to proceed

in an orderly manner. These components are shown in Figure 6 below. Insufficient attention to any one of these components is likely to result in sub-optimal project governance and may lead to surprises or even project failure. The credibility of the supervisor is on the line if there are any serious issues with the project or if the project fails. A project failure would likely mean a long pause before a similar plan to modernise solvency requirements could again be launched.



Figure 6: Project plan components



Source: RBSIF Drafting Group.

135. Setting up the project's scope, structure, governance and communication processes, ie operating in project mode, means shifting from the normal day-to-day organisational structure. Therefore, teams from different units may find themselves collaborating within the project and reporting to a different project manager than their usual one. Setting up the project involves preparing the teams to operate in this way and to rely on project management methods and tools. In addition, it is important to define transparent project governance with clearly defined levels of responsibility. Communication around the project should be as fluid as possible to promote effective project management.

#### 4.2.1 Developing rules of conduct

136. In order to ensure the project is running effectively it is important to have rules of conduct, which can be developed by the project manager. Those rules can include quality standards, mode of deliverables (documented, validated etc) or timing of deliverables. Rules can also be developed around resource and budget allocation (including monitoring and reporting thereof), team and stakeholder engagement, risk and change management, and communication and documentation management. A communication plan should be established to ensure an effective flow of information between team members. Also, it is important to keep records and document each stage of the process to allow for wide dissemination of information. For documents, a shared-access storage should be considered, including a clear document management process, disclosed responsible users and a designated owner/manager.

#### 4.2.2 Setting goals

- 137. **Outlining a high-level timeline.** Planning should include the establishment of a high-level timetable to which all stakeholders, both internal and external, will adhere. This means that once a deadline is set, teams and actions should be in place to ensure that everyone works towards the deadline.
- 138. **Timelines should include an element of flexibility to account for contingencies.** Changes in the timeline should be subject to the project's governance rules and ensure, to the extent



possible, that key milestones within it are not subject to subsequent further postponement or undetermined periods of time.

139. The timeline should be transparent and widely communicated to all relevant stakeholders. Communicating timelines and goals can foster clarity, align expectations and enhance collaboration with relevant stakeholders. This can also prevent misunderstandings and promote accountability.

#### 4.2.3 Prioritisation of tasks and activities

- 140. The process for setting key project milestones may vary according to the specificities of a jurisdiction. Factors to consider in the sequencing of tasks and activities can include an assessment of the resources and skills available within the supervisor and the industry as well as the resources and skills required; suggestions and concerns from stakeholders; time needed to develop, test and consult, and refine the framework; and the time required to implement.
- 141. Project planning and risk monitoring involves ensuring that each task is carried out according to plan and within the deadline. It is important to anticipate and mitigate potential risks that may arise, whether from internal or external factors.

#### 4.2.4 Assessing risks

- 142. A project risk assessment involves identifying, analysing and evaluating potential risks that could affect the success of a project. This includes assessing the likelihood and impact of each risk, as well as developing strategies to mitigate or manage the risks. Risks that could affect the project can be from internal factors (like resource constraints) or external factors (like delays in passing legislation or pushback from industry). It is also important to include a regular review and update of the risk documentation as the project progresses, as risks may change or fall away.
- 143. It is important to document and communicate the identified risks as well as the mitigating strategies. This can be achieved by creating a risk register with details on each identified risk, including its description, potential impact and likelihood, and proposed response plan. It is important to identify the key stakeholders to whom the risk analysis results need to be communicated in a clear and accessible format.

#### 4.2.5 Communication plan

- 144. A well defined communication strategy and detailed plan is critical for raising awareness, keeping all stakeholders involved and updated, and securing the support of stakeholders. The supervisor should communicate regularly and adequately according to the target group, both internally (including within the supervisor and government bodies) and externally (including industry, the public and international organisations). The supervisor can consider cooperating with the industry, particularly on technical or consumer protection-related topics.
- 145. Effectively communicating the project's progress to internal and external stakeholders is essential. Regular communication on project progress to all relevant stakeholders is as important as consulting on the technical aspects. This may include progress reports, email updates, presentations or online sharing tools.
- 146. Internal communication should not be underestimated nor neglected. Internal communication is part of change management and facilitates uniform understanding and fosters commitment from staff.



#### 4.2.6 Assessment and reporting of progress against project milestones

147. The monitoring of the project's progress should be carried out by the project manager. This involves monitoring progress against the initial schedule and taking corrective action as soon as deviations (or events likely to give rise to such deviations) from the established schedule are identified. This is necessary to ensure that the team stays on schedule.

#### 4.3 **Project design considerations**

148. A project can be constructed in different ways depending on the nature of the legal system in a jurisdiction, the resources available to the supervisor and the preferences of the supervisor and industry stakeholders. Every project has some key project stages required to complete the task, and most projects to transition to an RBS regime will have some stages in common. The different types of consultation depending on the stage are discussed in Section 4.4 below.

#### 149. The tiles shown in Figure 7 depict a few of these typical project stages.

Figure 7: Project stages



Source: RBSIF Drafting Group.

150. Although the stages could be common for different projects, there is no specific order in which to design the implementation of these stages. Although the stages could be common for different projects, there is no specific order in which these stages should be implemented. Several different options for how to proceed can be considered so that stages can be planned to occur at different times in the project plan. These different options can be grouped into staging and approach options. There are two broad types of project staging – conceptually-led or legislation-led – and there are two broad types of approach – a phased approach or a big-bang approach.



#### 4.3.1 Conceptually-led versus legislation-led projects

151. A conceptually-led project is one where the initial consultation is about the objectives of the project, with some options for designing the target RBS regime and a call for input on the approach to implementation of the target RBS regime. There is no drafting of legislation or legislative instruments at this stage, only a request for early input into the design of the RBS regime. Figure 8 sets out an example of how the tiles from Figure 7 can be arranged in a conceptually-led project.



Figure 8: Example of a conceptually-led project

Source: RBSIF Drafting Group.

152. A legislation-led project sets out the broad legislative framework for RBS, with technical details to be added later through other legal instruments such as regulations, standards or guidelines, all of which can be subject to separate consultation processes. In this staging option, the legislative framework is subject to consultation initially, and the details of implementing the legislative framework are subject to consultation in later project stages. Figure 9 sets out an example of how the tiles from Figure 7 can be arranged in a legislation-led project.



#### Figure 9: Example of a legislation-led project



Source: RBSIF Drafting Group.

#### 4.3.2 Phased versus big-bang<sup>26</sup> approach

- 153. The phased approach introduces RBS in phases rather than introducing all of the components of RBS at one implementation date. This may be an effective way of managing a project where the resources of the insurance sector and the supervisor are constrained to the extent that implementing all of the components of an RBS regime at once (ie the big-bang approach) would not be feasible.
- 154. A phased approach can commence with either quantitative requirements or qualitative requirements, where the development of one informs the development of the other. Starting with quantitative requirements gives the industry information about the direction and intent of the RBS regime. Insurers can use such requirements to test their own models and views of capital adequacy. Starting with qualitative requirements allows the industry to develop risk-based views and valuation methods as each insurer deems fit. Collecting all of the insurers' views and methods through consultation on qualitative requirements (see Section 4.4. below) can inform the development of the quantitative requirements.

<sup>&</sup>lt;sup>26</sup> Integrating all elements (quantitative, qualitative and disclosure) at once and testing the regime as a single unit.



#### 155. Figure 10 sets out an example of a project that is conducted in a phased approach.

Figure 10: Example of a phased approach



Source: RBSIF Drafting Group.

## 4.4 Stakeholder engagement: Consultations

- 156. The approach to stakeholder engagement will differ across jurisdictions and will be influenced by a range of factors stemming from the local environment, including statutory requirements, market development and stakeholders. Stakeholder engagement should be considered throughout the different phases of a project, from initiation to consultation, implementation and review.
- 157. Conducting this analysis early is crucial for identifying key stakeholders who might affect or be affected by the project; understanding their needs, expectations and interests; and developing tailored strategies for engaging with them. Prioritising stakeholder analysis at the outset of the project will facilitate better planning and more effective stakeholder engagement throughout the project's lifecycle.
- 158. In designing a stakeholder engagement strategy, the supervisor can leverage a range of tools including but not limited to newsletters, speeches, social media, advocates, webinars, bilateral meetings and conferences. The supervisor should map stakeholders (eg the supervisory community, insurers, consumers, academics, legislators, consultants and legal experts, media) for targeted engagement and, consistent with project timelines, leverage on layered communications to reach a wider audience, engaging openly and transparently, being clear about project timelines and opening public consultations, all of which is built on a costbenefit analysis.
- 159. A number of the tiles used in the figures in Section 4.3 above refer to a consultation, which is the process of including a broader set of stakeholders in deciding on a course of action



or seeking advice and special knowledge about a particular subject. In this section, we discuss the types of consultation in more detail.

#### 4.4.1 Conceptual

- 160. A conceptual consultation is an engagement with relevant stakeholders about the project and its defining aspects to guide the project. It is important that those involved in the project have a broad agreement on or a mutual understanding of the scope of the project. A conceptual consultation is about what the project aims to achieve and the principles of how the stakeholders understand it to have been achieved. This consultation could overlap with the project startup phase and should be planned to occur at the beginning of the project. An example of this approach is the first consultation on the ICS, which was issued in December 2014.
- 161. Project progress should be regularly reviewed alongside the concepts set out during the conceptual consultation. As the consultation occurs near the beginning of the project, review and amendments may be required as the project progresses and new knowledge and understanding is obtained.
- 162. The collaboration between supervisor and stakeholders should be structured. The supervisor leads and organises the development of the RBS regime, while industry collaborates, especially in field testing. Subject to its local legal framework, the supervisor may want to consult on the collaboration approach, eg on the working groups to set up.
- 163. Consultation on the relevant risk drivers and the possibilities of monitoring them will constitute the basis for constructing an RBS regime. It will involve both quantitative and qualitative requirements.

#### 4.4.2 Legislation

164. A legislation consultation is the process of getting public comments on the draft legislation. Each jurisdiction will have its own processes and steps to follow that will allow broader input from any stakeholder or citizen on the legislation as drafted by the project. Creating awareness of the intended change is as important as getting feedback on the potential impacts and unintended consequences of the proposed legislation, as considered by non-project stakeholders.

#### 4.4.3 Formal consultations

165. Formal consultations are well structured and follow predefined rules. They allow for the transparent and fair involvement of stakeholders and their participation until the adoption of the RBS regime. Timelines, forms of answers, circles of consulted persons etc are well defined. Formal consultations are usually time- and resource-consuming.

#### 4.4.4 Bilateral discussions

166. **Bilateral discussions are ad hoc and allow for agile developments.** Some structure is nonetheless necessary for efficiency. Typically, industry working groups according to a market segmentation are used for the discussions. One-to-one discussions between the supervisor and a particular insurer makes it possible to openly discuss particular matters that are confidential.



## 4.5 Industry input throughout the project

#### 4.5.1 Market under supervision eligible for RBS

167. The market eligible for transitioning to RBS should be identified. Often, a market in a jurisdiction is not completely under the supervision of just one supervisor. Some insurance-related activities may be supervised by a separate authority. In addition, branches of foreign entities may merit special treatment regarding RBS, depending on the legislation in the jurisdictions of the branch and the parent entity.

## Box 6: Jurisdictional experience – Identifying the market eligible for implementing an RBS regime

#### Switzerland

Besides the private insurance sector supervised by the Swiss Financial Market Supervisory Authority (FINMA) and subject to the SST, there are sectors in Switzerland that do not fall under FINMA supervision. In particular, pension funds and compulsory health insurance, which are not for profit, are supervised by other authorities. Therefore, they are not subject to the SST. As an example, compulsory health insurance is supervised by the Federal Office of Public Health (FOPH).

- 168. It is possible that the purpose and complexity of RBS lead to the inclusion of insurers that were not under the baseline regime and the exclusion of other insurers. The implementation of an RBS regime should be driven by the aim of RBS, meaning that the set of insurers eligible for RBS could be slightly different from those pre-RBS. Furthermore, the upcoming RBS regime can be tailored to the size and complexity of the insurer.
- 169. In particular, a feasibility study should address the question of which insurers are eligible for RBS. To the extent possible, the supervisor uses already available information to determine the set of insurers eligible for RBS. Consultation with stakeholders can support the determination of entities under supervision.
- 170. The market eligible for RBS should be separated into market categories, typically life/nonlife, international groups/local small caps etc, with possible overlap. These market categories aim to facilitate the development of calculation standards and processes for RBS by workstream and to stage the development of RBS. They are normally necessary for a manageable project and for efficiently obtaining industry input.
- 171. Each jurisdiction defines the appropriate market categories according to its local situation to make transitioning to RBS as easy and feasible as possible, including industry involvement. Typically, when defining these categories, jurisdictions may consider grouping by existing market sectors with structured trade associations, common market segments with some similar risks, specific rules or laws for a sector, and shared professional culture.

#### 4.5.2 Standards

172. The development of the quantitative, qualitative and disclosure requirements should be informed by continuous consultations. These three elements are quite distinct from each other but have some overlapping aspects, and could be subjected to public or broader stakeholder consultation either separately or in one consultation. These consultations could be linked to the project decision to follow either a phased or big-bang approach.



- 173. The development of quantitative requirements includes regular field testing. The quantitative assessment of the solvency condition would inform the impact of the requirements, which could be commented on in the formal consultation.
- 174. **Industry input takes several forms.** There are more formal consultations or those carried out more in a discussion mode; consultations can also be of different sizes and frequencies. Input from industry is not limited to consultation. Participation in field tests is important. Delivery of data for the supervisor to test in-house is another means of industry input.

## 4.6 Field testing

#### 4.6.1 Objectives of field testing exercises

- 175. The main objectives of field testing exercises are to evaluate and validate the target RBS regime and to assess the impact on the industry. Including aspects like IT systems, corporate governance and disclosure of information, field testing exercises help in identifying gaps. In general, field testing exercises should be accompanied by the following:
  - a. **Presentation** of analysis of the field testing exercise results;
  - b. **Meetings** with representatives of senior management to discuss high-level impacts and seek increased commitment to the project, as well as separate meetings with technical specialists to have a better understanding of the topics in accordance with their responsibilities; and
  - c. **Clarifications** the field testing exercise allows for a period of clarifying policy decisions and how these policies were translated into the RBS regime.
- 176. A number of field testing exercises could be required as the RBS regime settles and as the industry becomes proficient in performing the required calculations. This also allows for additional adjustments to finalise the requirements so they are fit for purpose. Insurers may need time to access the data required to perform the calculations and to develop the necessary systems and expertise. These successive field testing exercises may follow a progressive approach by increasing the scope of quantitative requirements and the sample of insurers covered.
- 177. The supervisor may decide to hold RBS implementation workshops with the industry to facilitate understanding of the target regime. These workshops are particularly beneficial for the medium to small insurers, who will have challenges in employing qualified personnel. Such workshops are also useful to better explain the purpose of options and calculation alternatives in reporting templates, the changes from previous reporting requirements and the position the supervisor will be taking in areas previously uncertain.
- 178. Overall communication with industry is crucial for a smooth transition. The supervisor should endeavour to have comprehensive reports of quantitative impact studies. In this regard, the supervisor should communicate elements such as the overall impact on industry solvency position; changes in solvency position from previous impact studies; the impact on resources, limitations and challenges; the status of position papers and discussion documents; and final resolutions on areas of uncertainty. The supervisor should also have dedicated lines of communication, such as a mailbox to attend to any queries that may arise.

#### 4.6.2 Field testing in several exercises

179. It is only upon the completion of the first field testing exercise that the industry will be able to provide feedback on the target RBS regime's impact on solvency, profitability and risk measurement calculations.



- 180. Subsequent field testing exercises can be used to adjust methodologies and parameters and improve the quality of information provided. This step can be repeated, if time allows, until the changes become minimal and less material. The supervisor and industry should use this time to fine-tune methodologies for calculations, to evaluate the impacts on financial statements and to adapt their IT systems.
- 181. The final field testing exercise should represent the RBS regime expected to be used as a legal requirement. The last field testing exercise could be used as a final test that all processes are working and that the target RBS regime performs as expected or at least acceptably. At this stage, the project can potentially progress to a parallel run phase.

#### 4.6.3 Parallel run – to ensure a smooth transition

- 182. Appropriate transitional measures ensure a smooth transition and minimal market disruption. Designing and implementing an RBS framework is undoubtably a complex exercise with quite onerous requirements for industry from a resourcing, system and process point of view. The transition can be made easier through a phased approach over a number of years. This may be done through an initial field testing, building up to more comprehensive parallel reporting. The field testing will be aimed at providing insights to the supervisor and industry on the impacts of the reporting requirements and will help refine the final RBS regime.
- 183. Field testing allows insurers and supervisors to gradually move to an RBS environment. Initial phases of parallel runs could be carried out on a voluntary basis. This allows industry to gradually become aware of the complexity of the new requirements and gaps in its resourcing, systems and processes while still providing useful information to the supervisor in refining the RBS regime. Field testing may be based on less complex quarterly reporting as opposed to annual reporting. For example, the solvency ratio calculation may be based on a simplification instead of a full recalculation. Field testing will be on a best efforts basis, without a requirement that the reports be audited. Supervisors may also request alternative calculations or sensitivities to help inform the final regime.
- 184. Comprehensive parallel runs afford the supervisor and industry the opportunity to establish and test resources, processes and systems before final implementation of the RBS regime. The comprehensive parallel runs will be compulsory and based on a full reporting requirement as envisaged under the RBS regime. Due to the onerous nature of the comprehensive parallel run from a resourcing and cost view, the timing of the comprehensive parallel run is important. The supervisor should roll out the comprehensive reporting when the framework is well defined. Unlike field testing, comprehensive parallel runs will not have several requests for alternatives or sensitivities, but rather will focus on the final calculations. A targeted audit or on-site inspection requirement can also be included in the comprehensive run. Such a process can be targeted in the sense of specific issues based on a risk assessment or specific insurers based on market coverage. Targeting of audit or on-site inspections should account for scarce resources.
- 185. During a comprehensive parallel run, consideration should be given to the existing reporting requirements. Due to the onerous nature of the comprehensive parallel run, consideration should be given to the extent to which insurers would need to continue to report on the existing regulatory framework. If possible, the supervisor can consider reducing the existing reporting requirements during this phase. It is important that insurers still report and demonstrate adherence to the existing solvency regime while testing is taking place on the new RBS regime.



## 4.7 Managing changes in legislation

- 186. An effective and appropriate RBS regime is only of theoretical benefit if the legislation in the jurisdiction does not afford the supervisor the authority to enforce its application. Changing legislation is often done by a body other than the supervisor. As mentioned above, the legislator, whose agreement and commitment to the project and the required legislation changes, is crucial to the success of the project.
- 187. Legislation and hence, the legislator does not refer solely to the law and the parliament. Depending on the jurisdiction and its legal setting, rules for an RBS are set at different levels. For instance, a supervisory law can delegate the power to develop, update and amend the rules for RBS to the supervisor or to a minister (eg Minister of Finance). This is not ideal and not in line with independence requirements in ICP 2, but it is a reality for many supervisors.
- 188. Changing the legislation will require support from policymakers. Support from policymakers can contribute significantly to securing buy-in from other stakeholders and broader society.
- 189. In some cases, the implementation of an RBS regime can have an impact on the tax obligations of insurers. Whether it does affect taxes, and the extent to which it does, depends on the jurisdiction's prevailing taxation legislation. The jurisdiction's tax authority should be consulted for any changes that it may want to make to add to the considerations for changing legislation.
- 190. Other legislation and agreements with other supervisory or regulatory bodies should be considered. Sometimes other legislation could be dependent on the insurance regulatory framework, eg conduct regulation may refer to solvency ratios, and an amendment or a simultaneous change could be required. Mutual agreements with other supervisory or regulatory bodies about information-sharing and mutual recognition and covenants with counterparties could be affected too and require consideration in order to mitigate negative impacts.
- 191. General agreement between the supervisor and the insurance industry can facilitate a smooth change in legislation. Other stakeholders, like industry representative bodies, could provide useful insight, context and views that could assist in achieving legislative buy-in. This buy-in should not be a prerequisite for implementing the change in legislation.
- 192. Certain aspects of the target RBS regime may have impacts that could lead to political fallout from sections of the electorate or from lobby groups. The legislator should be made aware of potential issues and assisted as much as possible to progress the change in legislation through its various stages. An economic impact assessment as described by the IAIS, if not already a requirement in the jurisdiction's legislation, could be another useful tool to explain the benefits of the transition to an RBS regime, as it also addresses the costs and disadvantages of such a transition.
- 193. The impact of changing legislation and the impact of the transition on legislation should be well understood, discussed and included in the coordination with the legislator. Whenever a phased approach is used in the transition to an RBS regime, the impact of the changes in legislation should be considered in collaboration with the legislator. Whether a phased approach should be followed for changing the legislation would depend on the structure of the legislation and the preferences of the legislator. A piecemeal implementation could have impacts on the project's timelines too, as each implementation would require time and effort from the project team and/or senior staff.



#### 4.8.1 Development of supervisory practices

- 194. As demonstrated in Figure 1 in Chapter 2, RBS and RBSup are interlinked. The transition to an RBS regime also necessitates transformation of the supervisor and supervisory processes, ie it is part of a larger RBSup project.
- 195. Ideally, a broader RBSup implementation should be aligned with the implementation of an RBS regime. As already mentioned in Chapter 2, RBSup includes wider but fundamental and closely related concepts such as power, objectives, corrective measures, supervisory practices and licensing. Therefore, the implementation of an RBS regime is successful when the supervisor aligns the overarching objectives of insurance supervision to that of an RBS regime, ie protecting policyholders; promoting the maintenance of a fair, safe and stable insurance market; and contributing to financial stability (where relevant). It can also include other supportive objectives like promoting insurance market development, financial inclusion and financial consumer education and contributing to fighting financial crime. Supervisory responsibilities and objectives should be aligned with the objectives of RBS, and any gaps should be addressed.
- 196. **RBS will also require the supervisor to have effective and defined governance structures and processes such as assessment of internal and capital models.** These should be transparent processes, ensuring consistency in the supervisor's actions and decisions.
- 197. The supervisor should develop and regularly review its supervisory requirements, policies and processes to ensure they remain appropriate. This can include accounting for changes in the characteristics of the industry, emerging risks and evolving international standards. The form these supervisory requirements can take can include the issuance of guidance notices, outcomes of thematic reviews, directives, dear CEO letters or supervisory expectation letters.
- 198. The supervisor should have appropriate tools to analyse, assess and monitor consistent adherence to the requirements of the RBS regime. These may include watchlists and early warning indicators of imminent breaches to solvency or liquidity requirements. Such watchlists can be integrated into the structuration of an internal guidance, which would be accessible to all of the supervisory team (both on-site and off-site supervision) to share understanding of the RBS and ensure consistency in supervisory actions.
- 199. The supervisor should also have in place internal processes and measures to ensure that the supervised entities maintain adherence to the RBS requirements. These may include capital add-ons, restrictions on dividends payments, restricting risk exposures, requirements to report solvency positions more frequently, requirements to strengthen supervised entities' control functions and imposing sanctions on breaches of RBS-stipulated requirements.
- 200. The supervisor should establish and communicate a supervisory framework requirement for regular and out-of-cycle qualitative and quantitative reporting of RBS. This will also include detailed guidance on such requirements. For example, log files can be published that accompany quantitative and qualitative reporting templates and explain the definitions and specifics of each line of the reporting templates.

#### 4.8.2 Change management

201. The implementation of RBS will require a change in the supervisor and the way insurers are supervised. It is most probably the biggest change a supervisor needs to go through and will require careful consideration and management to ensure alignment with the objectives of the RBS regime.



- 202. There may be resistance from supervisory staff to the change, as their experience and knowledge will be challenged by a new paradigm. Senior management should be vigilant about the perceived impact on staff, how their skills need to be developed and how additional skilled staff that may be necessary to recruit will be integrated with existing staff. Clear communication of support for existing staff, along with providing opportunities for staff to improve skills through internal training or supported external educational opportunities, should be a priority for senior management.
- 203. The implementation of RBS will accompany a complete change in the day-to-day work of supervisors. Prior supervisory frameworks will often involve significant numbers of approvals by supervisors, so they will have built skills in dealing with this administrative work. The implementation of RBS requires insurers to be able to manage risks and be held responsible for doing so. This will mean that many of the supervisory decisions previously required will now be the domain of senior management of insurers, and supervisors will need to hold them responsible for their management decisions. This requires supervisors to move from a checklist approach to approving certain transactions and appointments to being able to challenge senior management on the guality and outcomes of their decision-making. This ability of supervisors to sit across a table from senior management, probe their decisions, question their decisions and potentially make cogent arguments as to why senior management have not fulfilled their responsibilities will be a very different skillset for many current supervisors to develop. The quantitative requirements of RBS will reveal the impact of decisions made by management, in particular their approach to risk, but assessment of the qualitative requirements of governance and risk management may prevent adverse developments in the quantitative requirements. A balance of skills is necessary among supervisory staff to ensure that there are supervisors who have a deep understanding of the quantitative requirements and who can appropriately question statistical reporting, along with supervisors who have a deep understanding of governance and risk management issues in order to hold senior management accountable.
- 204. The supervisor should consider the appropriateness of the structure of supervisory teams. The supervisor can consider establishing multi-discipline supervisory teams (frontline supervisor and risk specialists in a team) or structure the teams into frontline supervisors (off-site and on-site separately) and form a dedicated risk support team and a dedicated policy and statistics team. The structure and the resourcing should be aligned to the complexity of the RBS regime, supervisory objectives in consideration with the resources available, and the capacity to increase resources.
- 205. A supervisory framework will have to be established and implemented to translate the objectives of the RBS and RBSup consistently across the supervisory teams. This will include defining and establish a shared understanding of elements such as:
  - a. Mechanisms for calibrating risk and their consistent application within the organisation when supervising different entity types and sizes;
  - b. A systematic approach to identifying and addressing risks and a strategy for management of such risks;
  - c. A systematic view of how much and what type of risk the supervisor is willing to tolerate, together with the ability to measure whether the risks identified are within the risk tolerance of the supervisor; and
  - d. Peer groupings, early warning indicators, supervisory materiality, and capital and risk concepts.
- 206. The supervisor should allocate sufficient resources (human and financial) towards technology infrastructure to ensure alignment with RBS objectives and framework. The



scoping of the technology solution is quite critical as this should encompass all the necessary changes for the RBS framework.

#### 4.8.3 Staff training

- 207. The supervisor should provide extensive training to staff at all levels. The focus of the training should cover the principles of RBS, with specific sessions on its technical areas. This training should take place continuously throughout the project, but should also continue post-implementation.
- 208. Senior management should take an active and visible role in the training. This can include monitoring the training programme, identifying issues arising from the training and aligning performance with training initiatives.

#### Box 7: Jurisdictional experience – Building actuarial capacity

#### Kenya

**IRA** identified the need to have a pool of qualified professionals (such as actuaries, risk managers and accountants) as a success factor for implementing RBS. When implementing RBS, IRA assessment concluded that at least 60 qualified actuaries would be needed. However, only nine were available. While universities in Kenya offered actuarial degrees, the professional actuarial qualification was only provided by overseas institutes, often with significant fees. The high costs of overseas examinations, low awareness of the certification and qualification process, and limited opportunities for actuaries contributed to the lack of actuarial capacity.

**IRA launched its Actuarial Scholarship in actuarial management to bridge the actuarial capacity gap in partnership with BAYES School in London.** Through this scholarship, students would study for the master's degree qualification and fast-track the process to be qualified as actuaries.

**Diversity and inclusion are key elements of the scholarship.** IRA promotes diversity and inclusion by giving scholarships across counties and gender. By 2022, the programme had 47 beneficiaries, with a female-to-male ratio of 1.13. Of the 47 beneficiaries, 55% have been successfully qualified and the remaining are ongoing.

As a result of the scholarship programme, the actuarial capacity in Kenya has increased. The Authority's scholarship has directly contributed to qualifying 26 Fellows and six associates. The authority has partnered with universities to continue to raise awareness and understanding of

The authority has partnered with universities to continue to raise awareness and understanding of the actuarial profession. Furthermore, the increased actuarial capacity has helped meet the demand for actuaries from local insurers.

In the evolving regulatory environment, demand for actuaries will likely continue its upward trend. The scholarship programme has better prepared Kenya to address new developments, such as the implementation of IFRS 17.

#### 4.8.4 Staff recruitment

209. At the outset of the project, an assessment of the existing breadth of skills of supervisory staff should be compared with the skillset needed to supervise RBS. It is likely that some skill gaps will be identified. Given that RBS projects are medium- to long-term projects, any skills



deficit can be addressed through a combination of staff training and additional recruitment of staff with particular skills and experience.

- 210. Actuarial skills are often in short supply within supervisory staff and are critical to the project's success. Over the length of the project, any deficit in actuarial skills may be bolstered through access to consultants, recruitment of actuaries and training of existing staff.
- 211. Staff will also need knowledge of good risk management practices and will need to understand effective governance practices. Knowledge of good practices in the management of underwriting, claims assessment, credit risk, market risk and operational risks such as cyber risk will be necessary to properly assess the qualitative requirements of RBS, along with assessing whether the quantitative requirements have been properly implemented and understood. If existing supervisory frameworks have not focused on these issues, then it is likely staff have not developed skills in these areas. Some external recruitment may be needed to bolster skills in these disciplines.
- 212. **Staff recruitment to bring in new skills may be resisted by existing staff.** Existing staff may have concerns for their own career development or continuing employment. Senior management should be sensitive to this issue and will need to have strategies in place to address difficulties with internal culture and staff morale. A key component of this will be for new recruits to be required to share their knowledge through formal training and on-the-job training.
- 213. Recruitment of staff with specialised skills will need to be accompanied by the ability to remunerate them appropriately. Supervisors will need to be able to make an overall offer of employment that is attractive based on conditions of employment, the attractiveness of the work, the career development inherent in the work, and pay and other benefits such as pensions and health care. Supervisors often struggle to compete with the private sector for necessary skills due to budget constraints or legal constraints on the payment of civil servants. An honest assessment of the ability of the supervisor to recruit the necessary staff will be an important initial consideration in determining the ambition of the project and the complexity of the final implementation of the project.

#### 4.8.5 Staff culture and relationship with insurers

- 214. Some supervisory staff may be nervous about the changing relationship with the insurance sector. Through their compliance-based interactions, supervisors may have some concerns about the ability and readiness of insurers to make decisions in which supervisors were previously involved. For example, some supervisors may have been involved in approving reinsurance arrangements. In an RBS regime, it is likely that principles for management of reinsurance arrangements will be put in place and the consequences of decisions will be reflected in the quantitative requirements. Some supervisory staff may express scepticism about insurers managing their own risks without direct supervisory involvement, and this scepticism may be warranted at the outset of the project. Allowing those supervisors to work with insurers and develop capacity in parallel such that insurers can implement appropriate governance and risk management and supervisors can assess that will help address this resistance. Supervisors also need to become comfortable with the possibility that outcomes of insurer risk management may not result in the same decisions as if the supervisor were still directly approving those decisions. The risk tolerance of the insurer may be different from that of the supervisor and will be reflected in the insurer's quantitative capital requirements.
- 215. The transition to RBS may involve a gradual transition away from extensive administrative requirements to full responsibility for risk management sitting with senior management of insurers. RBS transition arrangements may involve a gradual reduction in administrative compliance requirements and therefore traditional interactions with supervisors.



### 4.9 Industry culture

- 216. It is typical in a pre-RBS regulatory regime for industry to have a compliance culture. Interactions with the supervisor will be framed by the need to comply with administrative requirements. The introduction of RBS needs to be accompanied by a change to a risk management culture within the supervised industry. Compliance with laws remains of paramount importance, but this responsibility should be accompanied by the requirements of good governance and risk management. Compliance should be a risk that is actively managed. Supervisors should be able to challenge the quality of decision-making.
- 217. Through detailed administrative requirements, insurers may be used to supervisors being involved in some key decisions. RBS implementation requires that insurers take that responsibility on and supervisors step back from many of the administrative decisions and restrictive requirements. For example, supervisors may previously have had very detailed and specific investment requirements, but moving to RBS will mean adopting a more principles-based approach (such as the prudent person principle used in Solvency II),<sup>27</sup> so that supervisors are now assessing the risk management decisions made with regard to investments. In addition, higher-risk investment profiles will be accompanied by higher capital requirements through the more risk-sensitive quantitative requirements. More sensitive quantitative requirements will likely also reward better risk mitigation approaches.
- 218. Insurers may need time to develop new governance arrangements and a risk management culture. It is important that this cultural change be emphasised at the outset of a project and that insurers be encouraged to make the necessary changes throughout the course of the project. This is one of the key reasons why attempting a fast implementation of RBS is likely to have unintended consequences. If the majority of the industry is not ready for RBS and cannot comply with it, the supervisor will be put in a difficult position. One of the aims of the project should be broad compliance with the new requirements of RBS so that the supervisor can focus on a few outliers that are having difficulty complying with them. A significant amount of time is often required for insurers to make the necessary changes.
- 219. Insurers should consider the supervisor to be a partner in the implementation of RBS. Ultimately, supervisors need to be in a position of authority and will sometimes have to put in place requirements that the insurance sector does not fully support. However, the improvement of industry practices should be addressed through constant interaction and capacity development of the sector. Supervisors should work with the insurance sector to assist it to improve practices. Capacity development of the insurance sector may even be a clear goal of an RBS project.
- 220. The implementation of RBS should result in a better-run insurance sector. The process of implementation over the project timeline should improve governance and risk management within the insurance sector. Supervisors should not shy away from proposing requirements in their RBS regime that will stretch the capabilities of insurers as they find them currently. A process of continuous improvement of insurer capabilities is expected throughout the project. This will result in an insurance sector that better protects policyholders and financial stability. However, the issues outlined in Chapter 3 need consideration and there needs to be realism about what the insurance sector can achieve over the life of the project given the environment in which it operates.

<sup>&</sup>lt;sup>27</sup> The prudent person principle stipulates that insurers may only invest in assets and instruments whose risks the undertaking concerned can properly identify, measure, monitor, manage, control and report and appropriately take into account in the assessment of its overall solvency needs.



221. The nature of interactions between the supervisor and insurers will need to change and insurers will need to go through a process of cultural change to achieve that. Insurers that are used to dealing with the administrative requirements of supervisors based on detailed requirements may find it confronting to deal with principles for risk management, governance, investment requirements and the greater risk sensitivity of quantitative requirements. Senior management of insurers may find it to be more confronting to have supervisors with deep knowledge of these new requirements questioning and holding them to account for their governance structures, decision-making processes, risk management process and risk management decisions. Again, this is an issue that can be addressed over time through the project, in particular though sector-wide and bilateral interactions as set out in the sections on engagement with stakeholders. This process of interaction will further build the insurance sector's respect for the supervisor's knowledge and expertise. Ultimately, supervision will be much more effective if the insurance sector has confidence that supervisory assessment and decision-making will be carried out fairly on the basis of deep expertise. Both legal power and respect for the supervisor is needed for effective RBS implementation.

## 4.10 Timeframe examples from real cases

222. The following summarises case studies from Chapter 6 to provide a sense of time frames. The "transition period" is meant as an initial period with sufficient developments to have an RBS regime up and working, with no backward possibility. Any RBS regime is permanently under development, and the end of the transition period should not be understood as a full achievement of the RBS regime. Further, some jurisdictions may achieve an RBS regime as Factor-based Plus in a first step and move to a more sophisticated one afterward.



Case studies	Pre-RBS model	Transition period	RBS regime implemented	
Bermuda	Greater of	2002–16	Stress- & factor-based; Internal model	
Brazil	Fixed	2008–ongoing	Factor-based plus	
Chinese Taipei	Greater of	2003–ongoing	Factor-based plus	Stress- & factor- based
Croatia	Fixed	2005–13	Stress- & factor-based	
Japan	Factor-based	2007–25	Stress- & factor-based; Internal model	
Korea (Republic of)	Factor-based	2016–23	Stress- & factor-based	
Malaysia	Fixed	2001–09	Stress- & factor-based	
Mexico	Fixed	2009–13	Factor-based plus	
Peru	Factor-based	2008–23	Factor-based plus	Stress- & factor- based
Singapore	Factor-based	2001-2004	Stress & factor-based	
Switzerland	Factor-based	2002–11	Standard model; internal model	
Zimbabwe	Greater of	2015-ongoing	Factor-based plus	

Table 2: Pre-RBS model, RBS regime implemented and transition period

## 5 Technical aspects of implementing an RBS regime

223. This chapter covers the technical aspects of transitioning to RBS, including model definition and key components of RBS regimes. It provides an overview and some examples. Chapter 6 provides more summaries of RBS regimes that have been implemented.

# 5.1 RBS regime structure and connections between regulatory solvency requirements

- 224. **RBS is a complex set of quantitative, qualitative and disclosure requirements.** The content of the regulatory element is explained in detail in later subsections. It is important to point out at the beginning that the three sets of requirements should not be thought of as discreet components. They are clearly linked in content, and Figure 11 attempts to illustrate the key connections across the material. When developing RBS, it is important to be cognizant of these connections, but it does not mean that all three regulatory solvency requirements need to be developed at the same time, as is already set out in Chapter 4.
- 225. Figure 11 below, provides a graphical representation of the structure of the chapter. It sets out the material that will be covered under the quantitative solvency requirements. This material has its basis in ICPs 14 and 17. In addition, it is important to point out that the IAIS has done immensely valuable work in elaborating a modern quantitative solvency requirements framework for IAIGs in the form of the ICS. Figure 11 sets out material on qualitative solvency requirements that has its basis in ICPs 7, 8, 13, 15 and 16. Finally, there are disclosure requirements that have their basis in ICP 20 (Public Disclosure). A further aspect to Figure 11 is that it attempts to show how the different requirements under those banners are inextricably linked.





Source: RBSIF Drafting Group.

## 5.2 Quantitative solvency requirements

- 226. A supervisor should not attempt to "cut and paste" from a particular advanced market's quantitative solvency requirement. Such an approach is likely to have serious negative consequences for insurers, the reputation of the supervisor and access to insurance products in a market. A supervisor may use a particular jurisdiction's or a number of jurisdictions' quantitative solvency requirements as a starting point for considering the development of its own quantitative solvency requirement. However, it is highly likely that adjustments, simplifications and calibration differences are warranted for implementation in an EMDE context. This section attempts to set out some of those considerations. Reference to existing well established examples of quantitative solvency requirements is encouraged, and case studies are included in the guidance to facilitate that consideration. However, supervisors should bear in mind their own unique context for implementing a quantitative solvency requirement. There are no shortcuts in this process. This is why implementation of a quantitative solvency requirement should be carried out in a careful, structured way as part of an overall RBS regime.
- 227. The ICS, which has been carefully developed for over a decade by the IAIS, provides a rich source of valuable insights for any jurisdiction setting out to develop RBS. However, the ICS has been designed and calibrated to be implemented by IAIGs, and EMDEs will need to consider this in determining the insights they can derive from the ICS. Other than the way diversification benefits work with geographical diversification for some risks, the ICS architecture is fit for purpose for solo requirements and mirrors many advanced solo-level requirements in a number of ways. Details such as calibration levels and reduced complexity of risks covered can be addressed when assessing the elements of the ICS relevant to long-term development of RBS for EMDEs.



- 228. An RBS regime's quantitative solvency requirement has three key elements and should be developed based on a total balance sheet approach in accordance with ICP 17.1. The three key elements are a valuation approach for the insurer's balance sheet, determination of available capital resources and a capital requirement. These three elements need to be considered together, as choices made with respect to one element may have an impact on design choices that need to be made in another element.
- 229. Consider the simple example of how to treat goodwill within quantitative solvency requirements. Most supervisors agree that goodwill has no prudential value. In their quantitative solvency requirements, supervisors could express this view by either setting out valuation requirements that set the value of goodwill to zero or could deem it an inadmissible asset, apply a capital requirement equal to 100% of the value of goodwill recorded in the balance sheet, or deduct goodwill from available capital resources. It is important to consider, when designing the RBS regime, in which element certain risks, assets or liabilities will be addressed. A good example of this is if the supervisor decides to use general purpose financial reporting (GPFR) as the basis for valuation for the RBS regime; this will then drive other design decisions in terms of available capital resources and the capital requirement. GPFR usually allows goodwill to be recorded so that the RBS regime will have to include either a 100% capital charge or a deduction from available capital resources. See also ICP 17.1.1 for an explanation of the total balance sheet approach.

#### 5.2.1 Quantitative components

- 230. The scope of solvency assessment is the legal entity. From the legal framework, this is the legal entity that is liable to the policyholder.
- 231. Additional scope below or above the legal entity may be addressed, possibly in a separate framework. For simplicity, we do not address the question of group solvency in this guidance paper; however, it is an important issue especially with regard to financial market stability.
- 232. In an RBS regime, the quantitative solvency requirement and especially the capital requirement are related to the underlying risk factors. The risk factors are ideally represented as random variables with a specific probability distribution function. In actual implementations, deviations of a pure distribution-based framework are often implemented for practical reasons.
- 233. Quantitative capital requirements are usually structured with a ladder of supervisory intervention as required by ICP 17.4. This standard requires the establishment of a solvency control level, called the prescribed capital requirement (PCR), above which the supervisor does not intervene on capital grounds. The discussion below about the protection level of the RBS regime will take place in relation to the concept of a PCR. The supervisor should also establish a solvency control level called the minimum capital requirement (MCR), which is the minimum bound below which no insurer may be regarded as viable to operate effectively and below which the supervisor would invoke its strongest actions, for example beginning resolution proceedings. Each of these solvency control levels may be calibrated to a particular protection level, or one may be calibrated to a particular protection level with a relative calculation performed for the other. Practices have emerged around the world to focus the calibration of the quantitative capital requirement at the level of the PCR and to determine the MCR at a lower amount calculated relative to either the PCR or a simplification of the PCR. The remainder of the discussion in this chapter will focus on the PCR level of quantitative capital requirement. However, an MCR must also be derived, and it is very important that it be set at a level that will allow for an insurer to be resolved with a low probability of loss to policyholders. Powers of intervention around the PCR and MCR levels should be clearly established by legislation.



- 234. Compliance with quantitative capital requirements is usually expressed as a ratio of capital resources to the capital requirement. In normal operating circumstances, insurers would be expected to operate at a level above 100% such that reasonably foreseeable shocks to their operations would not result in them routinely reporting a PCR ratio below 100%. A PCR ratio below 100% should result in swift action by a supervisor to request a plan for restoring capital above the 100% PCR ratio.
- 235. The protection level of the RBS regime, as defined in relation to the PCR, should be considered at the outset of the project. Setting the protection level is a key parameter in an RBS regime and should reflect the desired level of protection to be provided to policyholders. There is a global consensus that a level of 99.5% value-at-risk (VaR) over a one-year time horizon (or something equivalent, such as 99% tail value-at-risk (T-VaR) over a one-year time horizon) is appropriate for advanced markets. VaR is the loss at a predefined confidence level (eg 99.5%), ie the loss that is not exceeded with probability equal to the confidence level. T-VaR is the expected value of the loss given that the loss exceeds the predefined confidence level. It is sometimes also called conditional tail expectation (CTE), expected shortfall (ES) or expected tail loss (ETL). Another way to describe VaR and T-VaR is by looking, for example, at 10,000 (simulated) losses assuming a confidence level of 99.5%. VaR would be set equal to the 50th largest loss. T-VaR would be calculated as the average of the 50 largest losses. The VaR is then equal to the 50th largest loss and the T-VaR to the average of the 50 largest losses. For a given confidence level, T-VaR will produce a higher value that is sensitive to very large losses above the VaR.
- 236. It is not always possible to derive RBS factors or scenarios fully aligned with the targeted protection level due to modelling challenges or lack of data for calibration purposes. Therefore, reflecting size, complexity, implementation and validation challenges, some simpler calibration approaches not directly linked to a defined protection level may be justified.
- 237. For EMDEs, replicating the same level of protection as is required in advanced market RBS regimes may be inappropriate when there are overarching goals of developing the insurance market. Reaching the same level of protection as in developed markets may be a long-term goal, but there may be an appropriate stepping stone on the way to that ultimate goal with a lower level of protection. The higher the level of protection, the more capital is required to be held by insurers. This higher level of capital is costly to hold, and the cost of capital has to be reflected in the premiums charged to policyholders in order for the insurer to be viable. If the overarching goal is to develop insurance markets and close protection gaps, then a lower level of protection may be appropriate while progress towards that goal is underway. Cost-benefit analysis should inform choices of calibration levels.
- 238. Any choice of a lower level of protection than that globally accepted in advanced markets should be considered alongside other aspects of the insurance regulatory regime and the market environment of the insurance sector. For instance, a well developed, speedy resolution regime may be an appropriate backstop to an insurance sector with a lower level of protection than is typical in advanced markets. The goal of developing an insurance market and closing protection gaps will not be achieved if policyholders are left with losses from multiple failures of insurers. Such an outcome will undermine the public's confidence in the insurance sector. A resolution regime that quickly provides certainty of payment of claims will enhance confidence. The development of resolution regimes for EMDEs is another subject that deserves further guidance. A further aspect to consider is the role of credit rating agencies in the market. If insurers in the market find it necessary to maintain a certain credit rating or financial strength rating from a global rating agency, that will often lead to a capital requirement greater than the regulatory quantitative capital requirement. In such circumstances, a lower regulatory capital requirement may have no practical effect in reducing the cost of capital for insurers. Similarly, an



insurance sector that is dominated by foreign-owned insurers may not see the benefits of lower capital requirements in the form of lower premiums if the group capital requirements of their home jurisdictions require that a higher level of capital be maintained.

- 239. This guidance paper does not advocate a particular level of protection, but it does advocate quantitative testing to establish a level of protection that the local insurance sector can reasonably implement and afford in the context of other goals such as closing the protection gap. There is little point in attempting to implement a requirement that cannot be met. This will lead to disruption, with potential withdrawal of capacity from the insurance market, and potentially a loss of reputation of insurers if they cannot meet new requirements. Also, supervisors will face a legal conundrum if they fail to enforce new requirements initially but subsequently attempt to enforce them. Precedents of forbearance may be used in legal challenges to the supervisor in future. If an insurer that does not meet the new requirements fails, then the supervisor may face legal and reputational jeopardy in terms of being held responsible for allowing an insurer that does not meet legal requirements to continue to operate.
- 240. Transition requirements are also a tool that can be used if local insurers cannot meet quantitative capital requirements in the short to medium term. Transition requirements that allow time for insurers to reach the desired level of capital can be structured in terms of a simple period of time where insurers have to plan their own transition pathway, or they may be structured in steps to be achieved in shorter periods of time. Allowing insurers to operate at a level of capital below the statutory requirement for a long period of time could lead to reputational issues for those insurers availing themselves of the transition arrangements. Disclosure requirements could lead to public pressure led by media reports for insurers to comply with the new requirements before the end of the transition period.
- 241. Quantitative capital requirements should focus on measurable risks. Risks that are more difficult to measure, for instance a new type of cyber attack on the legal entity driven by new technologies, may not be accurately measurable. Such risks should not be ignored, but how they are treated in the RBS regime should be considered. One option is to bolster the operational risk charge in the quantitative capital requirement beyond what is justifiable based on quantitative analysis of past losses. An alternative option is to require insurers to consider such risks in their qualitative requirements, in particular in the ORSA.
- 242. Liquidity issues should be addressed in the insurance regulatory framework but should not be addressed through quantitative capital requirements. The qualitative requirements should address liquidity risk; in particular, the ORSA should have a section devoted to liquidity risk. Supervisors may also consider quantitative liquidity requirements or tools such as mandatory liquidity stress testing. Such quantitative liquidity requirements are important for policyholder protection but are outside the scope of this paper aside from the issues that should be addressed in the qualitative requirements of the RBS regime.
- 243. A jurisdiction may be required to develop quantitative capital requirements for different types of insurer based on legislative requirements. Life and non-life insurance and, sometimes health insurance, are often addressed by different legislation. This may require the development of different quantitative capital requirements, particularly in terms of the risks to be addressed. These different quantitative capital requirements can be developed with the same underlying design philosophy and level of protection, but they may be different in important ways, eg the risks to be covered, particularly insurance risks.

#### 5.2.2 Valuation

244. A critical component of any quantitative capital requirement is the methodology used to value assets and liabilities held on the balance sheet for solvency purposes. This will



ultimately determine the approach used to measure risks as well as the amount of capital resources recognised. A key issue affecting the issue of valuation and the overall design of the PCR is the pursuit of a total balance sheet approach in line with the ICPs. Under a total balance sheet approach, the interactions between assets and liabilities should, as circumstances change, be reflected in both qualifying capital resources and the capital requirement.

245. Due to the direct relationship between valuation and the quantum of capital resources, the choice of valuation approach can be the most material aspect of the development of a quantitative capital requirement. Consider a typical balance sheet of an insurer, in which 90% of assets supports liabilities and about 10% of assets supports the capital requirement. See Figure 12, which shows how a 1% change in the value of either assets or liabilities leads to a much more significant change in capital. What this demonstrates is that a 1% change in either assets or liabilities results in an approximately 10% change in the value of capital resources. Any quantitative capital requirement is therefore highly sensitive to the valuation approaches taken for either assets or liabilities.



80 90 100 110

Figure 12: Impact of valuation on capital

Source: RBSIF Drafting Group.

0 10 20 30 40 50 60 70

Capital Liabilities Assets

246. There are broadly three approaches to valuation for a quantitative capital requirement: (1) use GPFR, (2) use GPFR with adjustments or (3) develop a bespoke solvency balance sheet for the purpose of solvency assessment. The choice between these approaches is especially critical for EMDEs, as they are working in a resource-constrained environment for policy development and supervision. Therefore, limitations on different valuation approaches for different purposes should be considered in a cost-benefit analysis. A bespoke solvency balance sheet is, in theory, the purest approach to developing a coherent total balance sheet approach, but it requires a significant investment of resources in policy development, testing and ongoing maintenance (eg publishing yield curves for use in valuing technical provisions). Basing the valuation approach substantially on GPFR, or at least the systems used in GPFR, can be cost-efficient for insurers and likely also for supervisors. The three broad approaches can be combined.

Before change

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247. Any approach used should be in line with ICP 14. Please refer to ICP 14 for all the relevant detail, but some salient features will be included here for discussion. ICP 14 requires an economic valuation, that technical provisions be valued using a current discount rate and that both a current estimate and margin over current estimate (MOCE) be calculated to determine the technical provisions. This is an example of how valuation and capital requirements interact. The calibration level of MOCE should be taken into account in order to achieve the overall level of protection specified using a total balance sheet approach. All things being equal, the higher the calibration of MOCE, the less capital should be required in relation to risks that reference the



valuation of technical provisions, or some of the MOCE could be recognised as a capital resource. Another key concept from ICP 14 is that assets and liabilities should be valued on consistent bases.

- 248. Many jurisdictions have implemented or are in the process of implementing IFRS for the GPFR of insurers. This provides a coherent approach to valuation across assets and liabilities based on the IASB's Conceptual Framework. It should be noted that GPFR is produced for insurer stakeholders, principally shareholders and creditors, and does put significant focus on determining profit for distribution in a particular reporting period. This purpose is not fully aligned with a supervisor's purpose of assessing the economic solvency position of an insurer at a point in time. This is the reason why some supervisors in some advanced markets have chosen to develop bespoke valuation approaches for solvency purposes. The cost-benefit trade-off for EMDEs may be different, and the implementation of IFRS 17 from 1 January 2023 in many jurisdictions may provide more confidence in basing valuation for solvency purposes on GPFR, even if some adjustments are considered desirable to achieve the necessary comparability and consistency of results for solvency assessment.
- 249. The implementation of IFRS 17 has changed the structure of the liability side of insurer balance sheets in GPFR and may even require adjustment to existing pre-RBS solvency requirements reliant on valuation from GPFR. This need for change can be a catalyst for transitioning to an RBS regime, as the existing pre-RBS regime needs to change anyway. A full discussion of the impact of IFRS 17 is beyond the scope of this paper, but some key considerations warrant discussion here. IFRS 17 introduces two key concepts for valuation when GPFR is relied upon. The first is an explicit risk adjustment that allows for the inherent uncertainty in the valuation of insurance contract liabilities (note the difference in terminology from "technical provisions" used in the ICPs). The second is the introduction of the contractual service margin, which is essentially a reserve of expected future profit included within the insurance contract liability valuation. How these components of insurance contract liability valuation are addressed in a quantitative capital requirement requires some discussion. Many commentators believe that the contractual service margin has loss-absorbing capacity and should be recognised in capital resources. There is also debate about the status of the risk adjustment and whether this is akin to the concept of the MOCE set out in ICP 14 or whether it has some characteristics of capital resources. This debate may be dependent on the calibration of the risk adjustment and the consistency of the risk adjustment applied by insurers.
- 250. Whether IFRS is applied or not, it may be necessary to adjust the approach used in GPFR to make it more suitable for solvency purposes. The figures generated for GPFR may not be used directly for solvency purposes, but the calculation methodologies may be used with more defined inputs or calibrations provided by supervisors. An example is that the discount rate used may be specified, and insurers may need to rerun the existing valuation models used for GPFR using the specified discount rate. Another example is that the supervisor may specify a technique and calibration for the risk adjustment to make it suitable for use as a MOCE.
- 251. Developing a bespoke approach to valuation for solvency purposes requires a number of policy decisions. This requires decisions on how to value insurance liabilities and reinsurance balances and how to value financial investments and financial instruments. Another material issue is whether and to what extent to value and recognise deferred taxes (if an insurer has experienced recent losses, these can be very material). As ICP 14 requires a current estimate and MOCE to determine technical provisions, a consistent approach to valuation of assets will most likely be fair value. The valuation of technical provisions requires many decisions about how to determine the current estimate and MOCE. On recognising deferred tax amounts, there are some benefits in the simplicity of not recognising deferred taxes. This approach requires calibration of the capital requirement, valuation approach and/or capital resources recognition to



not take into account tax effects directly (eg remove deferred tax assets (DTA) and deferred tax liability (DTL) and calibrate the capital requirements accordingly). The ICS takes quite a complex approach to taxation and does allow limited recognition of deferred taxes.

- 252. It is typical in a bespoke valuation approach to value technical provisions and reinsurance recoverables on a gross basis, which may vary from GPFR if it uses a net basis for determining insurance liabilities. Other typical adjustments would be to remove deferred acquisition assets and deferred acquisition liabilities and assess these as part of the cash flows valued for the purposes of the current estimate. Such structural adjustments would not be needed if GPFR uses IFRS and IFRS 17 has been implemented in the jurisdiction.
- 253. Determination of the current estimate component of technical provisions requires determination of contract boundaries for cash flows and the construction of the yield curve used to discount those cash flows to current values. The current estimate is the probability-weighted average of future cash flows per ICP 14. The choice of contract boundaries for short-term business, like typical non-life business, may be relatively straightforward. The choice becomes more complex for long-term business, particularly if there are options available to the policyholder and insurer in the structure of the product. This will require explicit guidance on how to address options and guarantees in product design as well as policyholder behaviour in relation to these features. It will also require explicit guidance about any future discretionary benefits inherent in the product design. There will need to be explicit guidance on contract recognition and contract derecognition, and data quality and setting of assumptions will also need to be addressed. Possible future management actions will also require guidance as to how these may be reflected in the determination of the probability-weighted future cash flows. All of these matters are typically addressed in accounting standards and are addressed in IFRS 17. Variations from accounting standards in these matters will introduce costs to insurers in terms of data acquisition and calculations that are additional to those required under GPFR.
- 254. Determination of the yield curve for current estimate discounting will require a number of policy decisions. The determination of the risk-free yield curve must be specified, and for some EMDEs this may be difficult to observe from market data. In the presence of long-term insurance contracts, the yield curve must be constructed to enable discounting of all future cash flows. This will require the base risk-free yield curve to incorporate market data, which, if asset durations are shorter than insurance liability valuation, will require an estimate of yield beyond the last observable liquid point on the yield curve. This will require the definition of a long-term forward rate and extrapolation from the last liquid point to that long-term forward rate. Then, an adjustment to the risk-free yield curve must be determined, and this may vary by product type as it does in the Market-adjusted Valuation (MAV). In the absence of deep and liquid markets, observation of market data to determine an adjustment to the risk-free rate may be difficult and may become arbitrary. Given the sensitivity of technical provisions for long-term products to each of these decisions and the amplified impact on capital resources of these choices, each choice needs to be carefully considered. The MAV provides an example of choices that can be made, but this may be too complex outside of advanced markets and a number of simplifications are likely needed in EMDEs. The approaches taken by actuaries and insurers for GPFR may be difficult to improve upon in the context of some EMDEs.
- 255. Determination of the methodology and calibration of the MOCE will also require critical policy decisions. Different methodologies are used in determining MOCE, with popular approaches including the cost of capital approach and the percentile approach. As an example, the ICS uses the percentile approach, with different percentiles specified for life (85th percentile) and non-life business (65th percentile). How the MOCE interacts with the determination of the capital requirement and capital resources is also an important question. For the ICS, as an



example, capital requirements are only determined with reference to current estimates, with MOCE being held constant pre- and post-stress or factor application.

- 256. In conclusion, a bespoke solvency valuation approach is certainly the purest approach to ensuring that the total balance sheet approach is used to assess solvency. This approach often builds on GPFR, and in particular for EMDEs GPFR processes may be the most pragmatic. The trade-off is likely between consistency and more entity-specific approaches allowed under GPFR. Using IFRS 17 as an example, there are many choices for an insurer to make in terms of the approach to discounting, the methodology and calibration used for the risk adjustment, the choice of approach to initial recognition of existing business, and the overall measurement model used, with three different measurement models specified. Supervisors may be able to address the diversity in GPFR accounting policies by specifying some aspects of the calculation that would be low-cost to implement but deliver the necessary consistency and comparability. Cost-benefit considerations should be at the forefront of development of RBS for EMDEs.
- 257. It is important to note that valuation will directly impact the recognition of capital resources, which always starts with assets minus liabilities. Further considerations for determining capital resources can be found in Section 5.3.

#### 5.2.3 Design considerations for the capital requirement

258. There are three important design considerations for a quantitative capital requirement: what risks should be measured, how those risks should be measured and how the measures of risk should be aggregated to determine the overall capital requirement. Each of these design considerations will be addressed in separate sections below.

#### 5.2.3.1 Risks to be covered

- 259. The risks to which an insurer is exposed are typically categorised as insurance risk, market risk, credit risk and operational risk. The supervisor should determine which risks are to be represented in the capital requirement and how unrepresented risks are addressed (eg in ORSA). Sub-categories are normally necessary (eg insurance risk is at least split into life and non-life).
- 260. Risk may be defined in terms of the risk of unexpected adverse changes in the value of an insurer's capital resources. For example, a life insurer will experience adverse changes in the value of its capital resources through increased technical provisions if there are unexpected changes in the level, trend or volatility of mortality rates. A non-life insurer may experience sudden adverse changes in the value of its capital resources due to a spike in outstanding claims reserves from natural catastrophe events. All insurers are exposed to the risk of a decline in asset value due to the possible default or loss of value of an asset due to increasing probability of default, or increasing loss given default due to increasing credit risks. It should be noted that expected losses should be recognised in the valuation of assets and liabilities.
- 261. **Insurers are exposed to risk on both sides of their balance sheets.** The value of assets can be affected by market risk and credit risk. The value of technical provisions can be affected by insurance risks but also may be affected by market risks through the discount rate used to determine the current value of future cash flows.
- 262. Operational risk is often considered to be a separate category of risk that may affect the value of assets and liabilities. Also, it is often considered not to be a risk that can be diversified. Operational risk is perhaps the most difficult risk to measure as it encapsulates many



different sources of risk. Calibration of operational risk is often done through an estimation that may not be as data-driven as other risk measures.<sup>28</sup>

- 263. In more advanced quantitative capital requirements, risk mitigation techniques and management actions are taken into account. Reductions in risk through risk mitigation and management actions should mainly be considered in relation to the use of stress scenarios. There should be criteria for considering risk mitigation techniques, and an example of this is set out in the ICS.
- 264. For an example of the risks covered, Table 3 below sets out the categories of risk covered in the ICS, their definition, how they are measured and how the risk measurement may be simplified for EMDEs, as well as necessary modifications for legal entity application.<sup>29</sup> The key lessons that can be taken from the ICS for application in an EMDE context are the categories of risk that are covered, as summarised in Table 3. Where relevant, ICS calibrations for emerging markets are provided for reference. This should be considered indicative, and all jurisdictions are encouraged to undertake their own statistical studies to determine relevant local calibrations.
- 265. The calculation of the quantum of each risk will be referred to as a risk charge, and risk charges or their related modules need to be aggregated for the total capital requirement. Measurement techniques and aggregation methods will be explained in more detail in subsequent sections. It is notable that there may be multiple points of aggregation. For example, in the ICS, life insurance risk charges are aggregated before aggregation in the overall capital requirement.

<sup>&</sup>lt;sup>28</sup> In 2023, the IAIS published an Issues Paper on insurance sector operational resilience, which identifies issues affecting operational resilience in the insurance sector and provides examples of how supervisors are approaching these developments.

<sup>&</sup>lt;sup>29</sup> The considerations for EMDEs set out in Table 3 are referential and based on data provided by IAIGs, and are not calibrated for local usage in EMDEs.

Categories of risk and risks	Scope/definition	ICS measurement method	Possible EMDE simplification	EMDE design considerations
Insurance risk				
Life risk				
Mortality risk	Unexpected changes in the level, trend or volatility of mortality rates	Stress to level of mortality rates, only applied to policies negatively affected by an increase in mortality rates	A factor could be applied to technical provisions for lines of business exposed to mortality risk.	Not relevant for non-life, likely immaterial for short-term life insurance. Emerging market calibration for ICS – stress factor of 12.5%
Longevity risk	Unexpected changes in the level, trend or volatility of mortality rates	Stress to level of mortality rates, only applied to policies negatively affected by a decrease in mortality rates	A factor could be applied to technical provisions for lines of business exposed to longevity risk.	Not relevant for non-life, likely immaterial for short-term life insurance. Emerging market calibration for ICS – stress factor of 17.5%
Morbidity/disability risk	Unexpected changes in the level, trend or volatility of disability, sickness and morbidity rates	Stress to four specified mutually exclusive benefit segments	A factor could be applied to technical provisions for lines of business exposed to morbidity/disability risk. Granularity may be reduced.	This risk may be relevant for both life and non-life quantitative capital requirements. See ICS for emerging market calibrations.
Expense risk	Unexpected changes in liability cash flows due to the incidence of expenses incurred	Simultaneous application of the prescribed stresses to the unit expense and expense inflation assumptions	A separate factor for expense risk based on the value of technical provisions or calibration of other life factors could take into account expense risks.	This is part of the life risk charges in the ICS and is taken into account in premium risk and claim reserve risk for non- life. ICS emerging market calibration – 8% increase in unit expense assumptions, 3% per annum expense inflation for years 1–10, 2% for years 11– 20, 1% for year 21 onwards.

# Table 3: Risks covered in ICS and their relevance to EMDE insurers (note that all risks are defined in relation to an adverse change in the value of capital resources due to the defined risk)

Categories of risk and risks	Scope/definition	ICS measurement method	Possible EMDE simplification	EMDE design considerations
Lapse risk	Unexpected changes in the level or volatility of rates of policy lapses, terminations, renewals and surrenders	Maximum of the lapse risk charge for the level and trend component (both upward and downward stresses calculated) and the lapse risk charge for the mass lapse component	A factor could be applied to technical provisions for lines of business exposed to lapse risk.	Lapse risk is only likely to be material for long-term life insurance business. Depending on product design, it may not be relevant for some emerging markets. See ICS for emerging market calibrations.
Non-life risk				
Premium risk (non-life)	Unexpected changes in the timing, frequency and severity of future insured events (to the extent not already captured in morbidity or disability risk)	Factor multiplied by the greater of net premium earned and net premium to be earned, with granular segmentation per geographical region	Less granularity may be applied if data availability does not support granular calibrations.	This is only relevant for non-life requirements. See other emerging market calibrations for ICS.
Claim reserve/revision risk	Unexpected changes in the expected future payments for claims (to the extent not already captured in morbidity or disability risk)	Factor multiplied by the net current estimate, with granular segmentation per geographical region	Less granularity may be applied if data availability does not support granular calibrations.	This is only relevant for non-life requirements. See other emerging market calibrations for ICS.
Both life and non-life risk				
Catastrophe risk	Unexpected changes in the occurrence of low-frequency and high-severity events	Stochastic catastrophe models may be used to calculate loss amounts resulting from natural catastrophe events. The natural catastrophe risk charge is the difference between the 99.5th percentile and the mean of the total annual aggregate losses, net of protections across the specified perils.	An uplift in factors already applied to relevant non-life and life business may be used to account for catastrophe risk.	Stochastic modelling may be difficult in EMDEs where insurer and vendor catastrophe models are not well developed. While there may be a long-term aim to develop such modelling capability, an uplift in other factors applied may be an interim solution as a way of acknowledging the risk without sophisticated modelling. See ICS for specified scenarios –

Categories of risk and risks	Scope/definition	ICS measurement method	Possible EMDE simplification	EMDE design considerations
				some of these may be immaterial for some markets.
Market risk				
Interest rate risk	Unexpected changes in the level or volatility of interest rates	The calculation of the interest rate risk charge is based on a combination of five stresses applied to the entire risk-free yield curve for each relevant currency.	Net exposures may be broken into different duration buckets. Factors may be applied to net exposures in different duration buckets.	EMDEs often do not have deep and liquid markets for instruments that would provide a reliable basis of calibrating a stress-based approach. An estimation and simplification based on factors will acknowledge the risk without spurious accuracy.
Non-default spread risk (NDSR)	Unexpected changes in the level or volatility of spreads over the risk-free interest rate term structure, excluding the default component	NDSR is calculated as a relative bi-directional stress applied to both assets and liabilities. It does not apply to sovereign assets or instruments issued by the IAIG that qualify as capital resources.	In the absence of deep and liquid markets, this is likely to be difficult to calibrate. NDSR may be taken into account in the calibration of factors for credit risk.	Many EMDEs will not have current, observable spreads for different fixed income assets.
Equity risk	Unexpected changes in the level or volatility of market prices of equities	Stress scenarios that affect the level and volatility of the fair value of equities, after management actions; there is also a Neutral Adjusted Dampener (NAD) that behaves in a countercyclical manner	Level stresses may be converted to factors applied to equity assets, and the impact of the NAD may be ignored.	Stresses for implied volatilities are not likely material unless there are significant derivative positions held by insurers. Stresses used in the ICS for the level of equity assets may be converted into factors applied to equities held if liabilities are not materially responsive to changes in equity valuation. ICS calibration for emerging market listed equities – 48%

Categories of risk and risks	Scope/definition	ICS measurement method	Possible EMDE simplification	EMDE design considerations
				decrease and 37% decrease for listed infrastructure assets.
Real estate risk	Unexpected changes in the level or volatility of market prices of real estate or from the amount and timing of cash flows from investments in real estate	Prescribed stress scenarios based on the change in the level of real estate prices after management actions	Level stresses may be converted to factors applied to real estate assets.	Stresses used in the ICS for the level of real estate assets may be converted into factors applied to real estate held if liabilities are not materially responsive to changes in real estate valuation. ICS calibration is 25% decrease for all markets.
Currency risk	Unexpected changes in the level or volatility of currency exchange rates	Two prescribed stress scenarios applied to net open positions for each relevant currency	Factor applied to net open positions in foreign currencies	If assets are typically held in the home currency, then this risk may be ignored. See ICS for currency pair calibrations.
Asset concentration risk	Lack of diversification in the asset portfolio	An incremental charge above market and credit risks for assets other than real estate, using a formula that considers the diversity of connected counterparties. Exposures to national governments are excluded. For real estate, a specified factor is applied to assets in excess of a specified threshold that are located within a defined concentrated area.	Rather than dealing with this risk in the capital requirement, it may be dealt with as a deduction from capital resources if an exposure to counterparties exceeds a specific threshold compared with capital resources	Many insurers in EMDEs will not be able to diversify their counterparties like insurers in advanced markets due to there being few appropriate counterparties (eg the government and a few banks). It is likely to be appropriate to either take this risk into account in the calibration of other risks or have a simplified approach that is workable in the market.
Credit risk	Unexpected counterparty default, including their inability or	The credit risk charge is determined by applying prescribed stress factors to specified net exposure	Simplified factors may be derived with less granularity.	The exclusion of exposures to national governments may need to be reconsidered in relation to EMDEs if the credit risk of the

Categories of risk and risks	Scope/definition	ICS measurement method	Possible EMDE simplification	EMDE design considerations
	unwillingness to meet contractual obligations in a timely manner	amounts. Stress factors are provided by type of entity, credit quality and maturity of assets by maturity buckets. Credit exposures to national governments, multilateral development banks and supranational organisations are not subject to the credit risk charge.		relevant national government is material. See ICS for relevant credit stress factors, which are not differentiated for emerging markets.
Operational risk	Operational events including inadequate or failed internal processes, people and systems, or due to external events; includes legal risk but excludes strategic and reputational risk	The operational risk charge is determined by applying prescribed stress factors to specified risk exposures. Risk exposures are broken into geographical segments and business segments – non-life, life (risk) and life (non-risk). Risk exposures are based on premiums, liabilities and growth in each segment.	A simplified, less granular approach may be considered. A single factor applied to revenue may be sufficient.	Simplification is likely to be necessary.


#### 5.2.4 Choice of calculation approach to risk measurement

- 266. The solvency regime defines the calculation approach to risk measurement by different categories of risk. Different approaches can be adopted for different items, eg a factor approach similar to Basel III may be adopted for credit risk, and a distribution-based approach could be adopted for non-life risk in the same overall capital requirement. This can be seen in the ICS example.
- 267. There are four broad categories of risk quantification used in RBS regimes: factor-based, stress-based, standard model-based and internal model-based calculations. The application of these calculations does not need to be of just one type across all risks to be quantified in the RBS capital requirement. Different risks may lead to decisions to apply different calculation techniques.
- 268. Factor-based calculations are those that take an asset value, liability value, revenue measure or expense measure and apply a factor or percentage to calculate the risk in relation to that value and the underlying activities represented by that value. Factor-based calculations are inherently easier to apply, verify and compare. For risks that affect the balance sheet in relatively predictable ways, a factor-based calculation is likely appropriate. Another way of looking at a factor-based approach is that it is a simple stress scenario. For example, consider equity risk, where a factor might be calibrated as x% of the value of equities in an insurer's investment portfolio. Alternatively, it could be described as a x% stress to equity values.
- 269. Stress-based calculations require modelling changes in the value of assets and liabilities given a specified scenario. Such scenarios are specified as instantaneous shocks. Examples are: (1) a stress on mortality rates and how this might affect certain life insurance liabilities; or (2) a movement in a yield curve and how this might affect both fixed income assets and insurance liabilities valued by reference to that yield curve. Stress-based calculations require the insurer to have the capability to model the impact of shocks. Modelling for scenario-based calculations requires the application of the standard scenario set by the supervisor using actuarial and valuation models. A graphical representation of a stress scenario is provided in Figure 13.
- 270. Standard model-based calculations require the supervisor to provide the industry with calculation tools that are usually based on stochastic models. Such models often use probability distribution functions and, in practice, are designed to be easy to implement and use. As an example, a multivariate normal or log-normal distribution can be built into a spreadsheet with standard segmentation, factors and parameter values provided by the supervisor. Simulation engines can also be considered with relatively simple tools available in the market.

#### Box 8: Jurisdictional experience – Solvency test for small insurers

#### Switzerland

The SST standard model is designed in such a way that, even though it is fully stochastic, it can be easily applied; FINMA is providing the necessary tools and templates. As a consequence, even small insurers are able – but also required – to submit full SST numbers. Concessions can be made on request in specific cases (well capitalised, stable insurers), reducing the amount of the required reporting. An actual exception to meeting the SST solvency requirements is only made to insurers with less than 5,000 policies and an annual premium sum of less than CHF 5 million, with the policyholders being informed about this exemption in advance, ie before entering the insurance contract.



Figure 13: Application of a credit risk stress scenario that only affects the asset side of the balance sheet



Source: RBSIF Drafting Group.

- 271. Internal model-based calculations for modules or the entire capital requirement offer the opportunity to set capital requirements tailored to insurers' specific risk exposures and reflecting their view of the risks. The calculations are based on the structure of their business and investment portfolios and usually involve significantly more granularity than in the other calculation approaches. Internal model-based calculations usually involve significant supervisory oversight of the model using specialist modelling skills. Supervision of the insurer may end up revolving around the efficacy and use of the model in decision-making. Oversight of internal models is very resource-intensive for supervisors and is usually only utilised with respect to the largest and most complex insurers, where the costs are justified for both the insurer and the supervisor. This resource need makes it rare for an EMDE supervisor to use this approach.
- 272. A special case for a calculation approach is catastrophe risks using a model-based approach. Both standard model- and internal model-based approaches often provide the ability to reflect specific geographic and risk exposures, which could significantly affect the magnitude of risks, as well as the specific features of insurers' reinsurance programmes. For catastrophe risk, a vendor model is often used and requires a combination of regulatory requirements, industry standards and market practices aimed at ensuring the accuracy, reliability and transparency of these models in assessing and managing catastrophe risks.



#### Box 9: CAT models

Vendor models for catastrophe risk are regulated through a combination of industry standards, regulatory requirements and market practices. These models are used by insurers and reinsurers to assess and manage risks associated with natural disasters such as hurricanes, earthquakes, floods and wildfires. Here are some key aspects of how they are regulated:

- **Regulatory oversight**: Regulatory bodies such as insurance or financial sector supervisors in different countries may oversee the use of catastrophe risk models. They may require insurers to demonstrate the accuracy and reliability of these models, especially if they are used for pricing, reserving or solvency purposes.
- Validation and certification: Some regulatory bodies or industry organisations may require catastrophe risk models to undergo validation and certification processes to ensure their accuracy and reliability. This could involve comparing model results with historical data or independent benchmarks to assess their performance.
- **Transparency and disclosure**: Supervisors may require insurers to disclose information about the catastrophe risk models they use, including the methodologies, assumptions and limitations of the models. This transparency helps stakeholders understand how risks are being assessed and managed.
- Internal risk management practices: Even in the absence of specific regulatory requirements, insurers and reinsurers often have internal risk management practices that govern the use of catastrophe risk models. These practices may include model validation, sensitivity analysis, stress testing and scenario analysis to assess the potential impact of catastrophic events on portfolios.
- Market standards and best practices: Industry organisations such as the IAIS or Catastrophe Risk Evaluation and Standardizing Target Accumulations (CRESTA) may develop standards and best practices for the use of catastrophe risk models. Adherence to these standards can help insurers demonstrate compliance with regulatory requirements and market expectations.
- **Model governance frameworks**: Insurers may establish internal model governance frameworks to ensure the proper use and oversight of catastrophe risk models. This could involve clear roles and responsibilities, model documentation, ongoing monitoring, and periodic review and validation of the models.
- **Collaboration and peer review**: Collaboration and peer review within the insurance industry and the broader scientific community can also help improve the quality and reliability of catastrophe risk models. Insurers may participate in initiatives such as model benchmarking exercises or research collaborations to enhance their understanding of catastrophe risk.
- 273. The challenge of designing an RBS regime for insurers is that risks have an impact on both sides of the balance sheet; in some instances, the same risk has impacts on both sides of the balance sheet at the same time, to varying degrees. As the complexity of insurance products and investment portfolios increases and sophisticated risk mitigation techniques are put in place, the way in which shocks propagate through the balance sheet becomes more complex and less linear in nature. Products with long durations and policyholder



and insurer options in the design of benefits significantly increase the complexity of modelling how shocks will affect valuation. On the asset side, complex asset mixes that involve structured securities, hedge fund investments and the use of derivatives for either hedging or modifying risk taking positions will be most accurately assessed through the modelling of particular scenarios.

- 274. The greater the complexity of insurance products and investment portfolios, the more likely it is that stress-based or standard models of calculating the impact of risks are appropriate, provided necessary preconditions are in place. Necessary preconditions include the availability of data for calibration of the scenarios, the availability of actuarial expertise and sufficient IT system capabilities at insurers. Supervisors may choose to include some stress-based risk charges in order to challenge the industry to improve its capabilities, but this choice should be made relatively early in the project in order for the industry to be able to implement the necessary changes. Supervisors should also be able to understand the calculations undertaken and should have the expertise to challenge insurers' actuaries, accountants and auditors about the underlying calculations.
- 275. A supervisor may decide to stage the development of its capital requirement, beginning with factor-based calculations and moving to stress-based calculations or standard or internal model-based calculations at a later stage of RBS development. Such an approach may accelerate the implementation of the quantitative capital requirement, with a transparent plan to move towards the more complex approaches, allowing insurers time to develop their expertise and modelling systems accordingly.
- 276. Vendor models could be (centrally) "approved" by the regulator to reduce validation burden on insurers. Vendor models can be an element of an RBS regime. They can be particularly useful for smaller insurers and relevant for particular risks, such as natural catastrophe risks. Some jurisdictions can use a streamlined and centralised approval of vendor models.
- 277. The framework should include validation requirements to ensure the credibility of the calculated figures. Data validation requirements can be included in the technical specifications for regulatory reporting and/or incorporated into the standards of actuarial practice required by the supervisor or the actuarial profession in the jurisdiction. Calculations may also be subject to audit, and this is a best practice that should be considered in the light of a cost-benefit analysis.
- 278. Field tests can inform different approaches to risk measurement, including assessing insurers' ability to implement more complex risk measurement calculations. Field tests should not only include reporting of the calculated figures; they should also include detailed qualitative feedback about the challenges and issues in performing calculations.
- 279. **Collaboration with other authorities is valuable in the design phase.** An efficient approach to developing the quantitative capital requirement may be to analyse and borrow from existing approaches in other jurisdictions, or indeed the ICS, as examples presented in this chapter show. Please refer to the summary of case studies in Section 6 that provide some relevant details and that may assist a jurisdiction in identifying other authorities with which to liaise.
- 280. Technical documents of the calculation approach (eg model description and standard parameters) and standardised tools for the industry calculation should be developed. In two examples, Mexico and Switzerland, a calculation tool was provided to industry; see related case studies.

#### 5.2.5 Aggregation of risks

281. All the risk charge calculations should be combined into an overall capital requirement; this will usually involve the allowance of some diversification benefit. It is unlikely that an



insurer would be faced with all of the shocks at one time, so some diversification benefit is warranted in how the risk charges are combined. These risk charges could be combined through a range of techniques. The aggregation could be carried out using a square root of the sum of squares method, a defined dependency structure such as a variance-covariance matrix, or the more sophisticated use of copulas often associated with standard or internal model-based calculations.

282. As an example, the ICS applies aggregation at multiple points in the overall calculation of the capital requirement. The level of complexity in the ICS may not be warranted for EMDE applications, but lessons can be learnt from the ICS approach. Taking a more simplified and streamlined approach, the impact of each aggregation could be taken into account in the overall calibration. For example, instead of applying an aggregation approach to all market risks, the calibration of the factors or stress scenarios could be reduced to approximate for the effect of a sophisticated aggregation approach, particularly if the business mix of insurers and their investment allocations is relatively homogeneous.

#### Box 10: Aggregation of risks – Lessons from ICS

The ICS applies aggregation for life insurance risks, non-life risks, catastrophe risks and market risks (and also within each of the market risks) before applying an aggregation approach across all of the risk categories except for operational risk, which is simply added. The ICS uses the variance-covariance matrix approach to aggregate among risk categories and also uses similar matrices within risk categories, for example for life risks. However, it also uses the square root of the sum of squares approach to aggregate catastrophe risk. The result of these aggregation approaches is approximately a 50% reduction from a simple addition of all of the risk charges based on monitoring period and field testing results. This reflects the fact that losses would not be experienced at the same time across all risks. Set out in Table 4 below is the ICS aggregation matrix between risks, provided as an example. It is notable that, other than the 0% correlation between life and non-life, all other correlations are set at 25%. While this may be a good starting point for considering the correlation of risks, this has been calibrated for IAIGs and the correlation of risks in local markets may differ significantly. Supervisors need to consider local market conditions when considering aggregation approaches.

	Life	Non-life	Catastrophe	Market	Credit
Life	100%	0%	25%	25%	25%
Non-life	0%	100%	25%	25%	25%
Catastrophe	25%	25%	100%	25%	25%
Market	25%	25%	25%	100%	25%
Credit	25%	25%	25%	25%	100%

#### ICS aggregation matrix

# 5.3 Qualifying capital resources

283. To assess the solvency of an insurer, the qualifying capital resources to be compared with the capital requirement should be specified. The foundation of capital resources will be the insurer's balance sheet based on the valuation approach specified by the supervisor. The excess of the valuation of assets over the valuation of total liabilities provides the basis of capital resources. However, criteria for identifying qualifying capital instruments that provide loss absorbency on a going-concern basis will be a useful enhancement where more complex capital



instruments are issued by insurers (not just a single class of shareholder's equity) or are contemplated by insurers in the near future. Qualifying capital resources are determined through an assessment of the nature, quality and suitability of all potential capital resources and the consideration of qualifying criteria and application of specified inclusions, exclusions, deductions, adjustments and limits.

- 284. In advanced markets, it is typical for qualifying capital resources to be classified into at least two tiers of quality of capital. However, if financial instruments issued by insurers in an EMDE are straightforward and balance sheets are also relatively straightforward, this complexity may not be warranted. The purpose of tiering capital resources into at least two tiers of capital is to distinguish between higher-quality elements and lower-quality elements and to limit the amount of the lower-quality elements that are accepted as qualifying capital resources. Qualitative assessment of capital elements considers subordination to the rights of policyholders, availability to absorb losses, loss-absorbing capacity and the circumstances of loss absorbency, the period in which the capital element is available and the absence of encumbrances or mandatory servicing costs.
- 285. Adjustments and deductions from capital resources should be considered. It is typical that, if the valuation approach gives a value to assets that are not readily available to absorb losses, there will be a deduction of the value of those assets or an adjustment or haircut to the value of those assets for qualifying capital resources. Examples for deduction are goodwill and other intangible assets, as well as assets such as surpluses in defined benefit pension plans. If a tiering approach is taken, these may be candidates for some recognition in a lower tier of capital (it may become available in a resolution). Another example of assets that may be excluded or adjusted are reinsurance recoverables derived from reinsurance arrangements that are not legally binding (ie no formal contractual arrangement is in place). Any encumbrances on assets is not available to absorb losses. Recognition of DTAs in qualifying capital resources is often restricted. Any reserves held for specific purposes may also be restricted in their ability to provide loss-absorbing capacity in a range of circumstances and may need to be considered for an adjustment or haircut in determining qualifying capital resources.
- 286. The implementation of tiering of capital, limits on lower-quality tiers of capital, and deductions and exclusions from capital resources are all policy issues that require careful consideration. EMDEs should be particularly mindful of the need for complexity given the nature of the balance sheets and capital instruments issued by insurers in their markets. The issuance of more complex capital instruments that have some characteristics of both equity and debt may point to the need to have more complex capital resources requirements. The presence of intangible assets, significant DTAs and other assets that will not be available to readily absorb losses also points to the need for a more complex approach. Supervisors may also have an eye on likely market developments and create a framework for addressing more complex capital resources questions as they arise in their market. The ICS includes a detailed approach to tiered capital resources that is similar in concept to that applied by a number of advanced market supervisors and also highly aligned with the approach to qualifying capital in banking sector capital frameworks. This may be a useful example to consider what elements are relevant for a particular jurisdiction and to consider whether tiering is indeed necessary. If most of the specification of capital resources in the ICS would not be relevant for an EMDE jurisdiction, that may point to the need to simplify.



### 5.4 Qualitative solvency requirements

#### 5.4.1 Governance

# 287. A global and coherent approach to the solvency system requires a strong interweaving between the quantitative solvency requirements and the qualitative solvency requirements:

- The prospective assessment of solvency is based firstly on the early and exhaustive identification of risks and an established risk management system that makes it possible to assess the extent of these risks, monitor them and manage them within the level of exposure defined by the relevant authority.
- For quantifiable risks, the assessment of risk exposure provides the elements necessary for the economic valuation of the balance sheet and the calculation of the margin requirement.
- The insurer's entire operating environment, as shown in the chart below, should be reinforced by an internal control and governance system that:
  - Makes the financial and non-financial information used in risk management, economic valuation of the balance sheet and calculation of the margin requirement more reliable; and
  - Guarantees, through compliance with defined strategies and processes, the control of residual exposure to non-quantifiable risks, thereby limiting the need for additional margins that may be required by the supervisor.



Figure 14: A global and coherent approach of the RBS regime

Quantitative Solvency Requirements Qualitative Solvency Requirements

Source: RBSIF Drafting Group.

288. The requirements of RBS in terms of organisation and risk governance system should be based on principles. The supervisor may leave it up to each insurer to define its own organisational structure and only define the key functions and high-level principles and expectations. The supervisor may issue guidelines for the implementation of the high-level principles and expectations. The requirements of the RBS regime should be clear on the need to integrate risk assessment into business strategy and strategic decisions.



- 289. The supervisor should require insurers to demonstrate their compliance with governance requirements. An insurer should have an operational risk management and monitoring of its risks that guarantees:
  - Good knowledge of the risks to which it is exposed (risk profile) and a coherent assessment of its exposures at a given time;
  - An operational mechanism for managing them; and
  - Reporting of the necessary information and the ability of the responsible party to make the necessary decisions.
- 290. The requirements of an RBS regime should be clear on the need to integrate risk assessment into business strategy and strategic decisions. Indeed, any management decision (launch of a new product line, modification of the strategic asset allocation, amendments of the parameters of a reinsurance treaty etc) has an impact on the insurer's risk exposure and on the level of capital that it should hold.
- 291. **Principle of proportionality**: The requirements should present a "minimum base" to be respected from a regulatory point of view. These principles should, in general, require insurers to apply them in a specific manner and adapt them specifically to the nature, size and complexity of their risk profile. All insurers shall be able to understand the risks to which they are exposed and monitor their risk profile, regardless of the application of the principle of proportionality.<sup>30</sup>

#### Box 11: Jurisdictional experience – Solvency requirements for small insurers

#### France

The Solvency II directive does not apply to an insurance undertaking provided that cumulative conditions are met in terms of size (eg thresholds of annual gross written premium income, technical provisions and reinsurance operations), type of activity performed<sup>31</sup> and structure.<sup>32</sup> These thresholds have been raised as part of the current revision of the Solvency II directive (Directive 2025/2), (from EUR 5 million to 15 million of annual gross written premium; from EUR 25 million to 50 million of technical provisions), which will enter into application by 30 January 2027.

Hence, insurance undertakings, which follow these conditions, still operate under the Solvency I directives, namely directive 73/239/CEE on non-life insurance activities and directive 79/267/CEE on life insurance activities, their further amendments and corresponding transpositions in national law. Regarding non-life insurance activities, capital solvency requirements as part of Solvency I are based on a formulaic approach.

- 292. **Decision-making architecture**: This means ensuring that all relevant information is provided to the appropriate hierarchical levels in time to examine problems and take the necessary decisions. The insurer is then in a position to manage its risk exposures and to react quickly in the event of deviations of its risk profile.
- 293. Written policies are required to ensure that the insurer manages its business in a sound, prudent and efficient manner. The written policies are the documents that describe the risk management process. This process can be defined as a set of steps that allow parties to reach a common decision that is as satisfactory as possible given their situation. Thus, these policies

<sup>&</sup>lt;sup>30</sup> See section on proportionality and risk-based supervision in the ICPs' Introduction and Assessment Methodology.

<sup>&</sup>lt;sup>31</sup> The business of the undertaking does not include primary insurance or reinsurance activities covering liability, credit and suretyship insurance risks, unless they constitute ancillary risks.

<sup>&</sup>lt;sup>32</sup> The undertaking does not belong to a group, in accordance with some national transpositions of this directive.



make it possible to describe more precisely the roles and responsibilities of key persons. A division of tasks is then established between the board of directors, senior management and the operational teams. In some cases, the policies reinforce the responsibility of the board of directors, including allowing it to delegate matters.

- 294. **These policies should be reviewed regularly.** To ensure they are effective and relevant, the board of directors should annually review and validate the policies, adapting and updating them annually or as deemed necessary, taking into account the insurer's overall strategy.
- 295. The implementation of governance requirements is often beset with challenges. Some of these are:
  - Establishing a rigorous and solid governance system that guarantees the quality of the insurer's management and the effectiveness of the control system, because good governance is considered a guarantee of compliance with quantitative requirements;
  - Establishing an adequate and effective risk management system that demonstrates the existence of an operational risk management system within the insurer; and
  - Integrating and managing the control of subcontracting risks.
- 296. The objectives of implementation of the governance requirement can be summarised as follows:
  - Demonstrate to the supervisor that the insurer's culture is embodied in written policies, based on risk appetite/tolerance, to define and update:
    - Operational limits that are effectively monitored and controlled; and
    - Emergency measures such as the business continuity plan (BCP) and the IT disaster recovery plan (DRP).
  - Produce the various reports and qualitative documents within the qualitative solvency requirements (actuarial function, ORSA) that will describe the efforts already made or still to be made to control its risks.
  - Manage and protect equity capital in line with the evolution of the business.



Figure 15: Components of governance system



Source: RBSIF Drafting Group.

297. Tools and reference systems, such as the ERM approach, make it possible to link the insurer's strategy with a level of risk-taking accepted and assumed by management and operational staff. The specifications of the qualitative solvency requirements have to make the risk function the "cornerstone" of the risk management system. The establishment of a risk culture is a major element of the qualitative solvency requirements. In terms of an operational and efficient governance, it is one of the major elements in achieving the objective of compliance. To achieve this, insurers should use the two main levers, which are communication and human resources management.

Figure 16: Main categories of risks to be covered



Source: RBSIF Drafting Group.



- 298. Control functions are a key component of an RBS regime and play a critical role in assessing the capital adequacy and financial soundness of an insurer. The definition of a risk function will vary according to each jurisdiction's legal framework and usually comprises identification and measurement of risk categories, aggregation and diversification of risks, establishment of solvency thresholds, and reporting and compliance. The control functions are part of a broader internal control system.<sup>33</sup>
- 299. The role of a control function is to "add to the governance checks and balances of the insurer and provide the necessary assurance to the Board in the fulfilment of its oversight duties". Per ICP 8, an insurer should have control functions that include risk management, compliance, actuarial matters and internal audit. Regardless of where a control function is situated within the insurer's organisational structure, it should execute its responsibilities so that the internal controls system in aggregate fulfils its objectives.
- 300. The head of the risk function should have an overall view of all of the insurer's risks, their interactions and the measures taken to deal with them. The head should also be able to provide a forward-looking analysis of the elements mentioned above. This person should have professional experience in risk management; experience as a statutory auditor, auditor or internal controller is acceptable. It is strongly recommended that the head hold a management position within the insurer or a comparable insurer.
- 301. Risk management, actuarial and compliance functions are responsible for assessing the appropriateness of the controls used by the insurer. As stated in ICP 8.2.1, an insurer's internal controls system "should ensure effective and efficient operations, adequate control of risks, prudent conduct of business, reliability of financial and non-financial information reported (both internally and externally), and compliance with laws, regulations, supervisory requirements and the insurer's internal rules and decisions".
- 302. In incorporating control functions into the regulatory regime, the independence and stature of the control systems should be observed. Internal controls and risk management should be established with sufficient independence to minimise conflicts of interest and powers to perform the roles effectively. Appropriate stature within the organisation ensures that the control function's concerns and recommendations are given proper consideration within the insurer by the board, senior management and other functions/business units.
- 303. Depending on the available resources and varying levels of market maturity, some supervisors may prioritise enhancing the capacity of their staff and insurers while addressing resource limitations. The implementation of risk control functions relies on a strong understanding of effective risk management and control systems. Additionally, the combination and integration of functions may help mitigate resource constraints for both supervisors and insurers. However, when combining or integrating functions, it is essential to maintain clear boundaries to avoid conflicts of interest and ensure that control functions remain effective.

#### 5.4.3 Risk management

304. ICP 8 sets out that "the supervisor requires an insurer to have, as part of its overall corporate governance framework, effective systems of risk management and internal controls, including effective functions for risk management, compliance, actuarial matters

<sup>&</sup>lt;sup>33</sup> See IAIS (2021a).



**and internal audit**." Risk management and internal controls will be organised and operate depending on the governance approach the group takes.

- 305. In line with ICP 8.1.3, risk management functions should allow for the identification, assessment, monitoring, mitigation and reporting of all risks in a timely manner, and should promote a sound risk culture. This function cooperates with the other key functions (actuarial, compliance and internal audit) in the performance of their duties, in particular with the actuarial function. The risk management system should at least cover the following risks: underwriting and reserving, asset-liability management, investments, liquidity, concentration, operational and conduct, and reinsurance and other risk mitigation techniques.
- 306. In supporting the establishment of a robust risk management function, the insurer will need to be appropriately resourced. For some larger or more complex insurers, the risk management function is typically led by a Chief Risk Officer (CRO). As described in Section 3.3, the insurer needs to consider resourcing and ensure that the required capabilities and expertise are in place to fulfil the risk management function. The risk management control function, together with the risk and control functions, should inform the capital adequacy in an RBS regime.

#### 5.4.4 ORSA – The bridge between the quantitative and qualitative solvency requirements

- 307. A simplified version of ORSA could be employed as an initial building block. This streamlined version would focus on the most critical elements of risk and solvency assessment, tailored to the specific context and capacities of EMDE markets. As skills, expertise and understanding mature, this simplified model could then be progressively elaborated into a more comprehensive ORSA framework.
- 308. **The ORSA is a core component of an ERM framework.** ICP 16 states that the supervisor requires the insurer to establish within its ERM framework the requirement to perform an ORSA for solvency purposes to identify, measure, report and manage the insurer's risks in an ongoing and integrated manner.
- 309. ICP 16 builds upon ICP 8, which requires insurers to have effective systems of risk management and internal controls. This includes effective functions for risk management, compliance, actuarial matters and internal audit as part of the overall corporate governance framework.
- 310. **ICP 16 sets out standards and guidance for ERM frameworks.** An effective ERM framework should include the following components:
  - Risk identification (including group risk and correlations between risks);
  - Quantitative techniques to measure risk;
  - Inter-relationship of risk appetite, risk limits and capital adequacy;
  - Risk appetite statement;
  - ALM, investment, underwriting policies and liquidity risk management;
  - ORSA; and
  - Recovery planning.
- 311. The ORSA gives insurers a complete and holistic view of their risk profiles to inform decision-making on business strategy and capital planning. It combines the quantitative and qualitative requirements and the insurer's own views of them, and addresses how the qualitative matters can affect the quantitative calculations.
- 312. ICP 16 also provides guidance on the requirements that the supervisor should expect from an insurer's ORSA:



- To encompass all reasonably foreseeable and relevant material risks, including, at a minimum, insurance, credit, market, concentration, operational and liquidity risks and (if applicable) group risk;
- To identify the relationship between risk management and the level and quality of financial resources needed and available;
- To assess the insurer's resilience against severe but plausible macroeconomic stresses, for example using scenario analysis or stress testing; and
- To assess the insurer's aggregate counterparty exposures.
- 313. **The supervisor undertakes reviews of the insurer's ERM framework, including the ORSA.** Where necessary, the supervisor requires strengthening of the insurer's ERM framework, solvency assessment and capital management processes.

#### 5.4.4.1 Responsibility

- 314. ICP 16 assigns ORSA responsibility to the board and senior management of the insurer.
- 315.ICP 16 states that the supervisor should require the insurer to perform regularly its ORSA to assess the adequacy of its risk management and current, and likely future, solvency position.

#### 5.4.4.2 Assessment of overall solvency needs

316. The supervisor should require the insurer to determine, as part of its ORSA, the overall financial resources it needs to manage its business given its risk appetite and business plans. The insurer should also base its risk management actions on consideration of its economic capital, regulatory capital requirements, financial resources and its ORSA. This exercise should also enable the insurer to assess the quality and adequacy of its capital resources to meet regulatory capital requirements and any additional capital needs.

#### 5.4.4.3 Continuity analysis

317. The ORSA serves the insurer to analyse its ability to continue in business, and the risk management and financial resources required to do so over a longer time horizon than what is used to determine regulatory capital requirements. In addition, the insurer's continuity analysis should address a combination of quantitative and qualitative elements in the medium and long-term business strategy of the insurer and include projections of its future financial position and analysis of its ability to meet future regulatory capital requirements.

#### 5.4.4.4 Recovery planning

- 318. The insurer develops and maintains a recovery plan that identifies in advance options to restore financial strength and viability if the insurer comes under severe stress. The objective of a recovery plan is to aid the insurer in understanding its own risks from severe stress scenarios and to be better prepared to provide an effective response in times of stress.
- 319. As part of the ORSA, the supervisor requires, as necessary, insurers to evaluate in advance their specific risks and options in possible recovery scenarios. If a plan is required, it should be reviewed on a regular basis or when there are material changes to the insurer's business, risk profile or structure, or any other change that could have a material impact on the recovery plan, and updated when necessary.



#### 5.4.4.5 ORSA in practice

- 320. The output of the ORSA process is typically documented in an ORSA report submitted to the supervisor. The report provides a starting point for the supervisor in its assessment of an insurer's solvency position.
- 321. The content of an ORSA may vary somewhat from jurisdiction to jurisdiction, but it will generally include at a minimum the following topics:



Figure 17: The content of an ORSA

Source: RBSIF Drafting Group.

#### 5.4.4.6 Elements to require in an ORSA

#### 5.4.4.6.1 Requirements

# 322. As part of their risk management system, insurers and reinsurers are required to conduct an internal risk and solvency assessment that addresses:

- The overall solvency requirement (OSR); and
- Ongoing compliance with the PCR and prudential technical reserve requirements.

#### 323. The assessment of the OSR covers:

- The risks to which the insurer is exposed or could be exposed, including specific risks, taking into account the changes that its risk profile could undergo in the future as a result of its strategy or the economic and financial environment, as well as the impact on the result; and
- The nature and quality of the elements constituting the insurer's equity or other resources adapted to cover the aforementioned risks.

#### 324. The evaluation of the OSR takes into account:

- The relevant time horizons adapted to the risks to be incurred by the insurer in the long term;
- The valuation bases appropriate to the insurer's activity and risk profile; and
- The insurer's internal control and risk management systems, as well as the approved risk tolerance limits.

# 325. Internal risk and solvency assessment is an integral part of business strategy and is systematically taken into account in the strategic decisions of the insurer and reinsurer.



326. The ORSA exercise is required annually and immediately following any significant change in risk profile. The primary insurance and reinsurance undertaking shall inform the supervisor of the conclusions of each assessment.

#### 5.4.4.6.2 Guidelines

- 327. The ORSA guidelines may be organised in the form of statements with details, relating to the following areas:
  - Principle of proportionality;
  - Forward-looking nature of the ORSA;
  - Role of the board of directors/supervisory board;
  - Documentation;
  - ORSA report to the supervisor;
  - ORSA policy;
  - File for each ORSA;
  - Internal report on ORSA;
  - Assessment of the OSR;
  - Ongoing compliance with regulatory requirements in terms of the solvency capital requirement (SCR) and its coverage;
  - Ongoing compliance with technical liabilities; and
  - Link to the strategic management process and decision-making framework.

#### 5.4.4.7 Risks for ORSA to address

328. The assessment of the OSR covers the risks to which the insurer is exposed or could be exposed. This includes specific risks, taking into account the changes that its risk profile could undergo in the future as a result of its strategy or the economic and financial environment, as well as the impact on the result.

# 329. To have a clear vision of its risk profile, the insurer should first identify and categorise all the risks to which it is exposed. Thus, the insurer should consider:

- Risks from quantitative solvency requirements: the risks covered by the quantitative solvency requirements are an essential basis for risk mapping. Examples: market risk, underwriting risk, concentration risk, counterparty risk.
- The major risks identified by the management bodies, eg reputation risk, strategic risk.
- Operational and non-compliance risks: these risks can already be identified within the insurer by internal control through its operational risk mapping work.
- Additional risks: identified by the internal experts of the operating entities who are confronted with the insurer's risks on a daily basis in their operational activities or through audit activities.



#### Box 12: Jurisdictional experience – Implementation of ORSA

#### Peru

The risk-based capital model proposed by SBS is based on the three-pillar conceptual framework. Pillar I corresponds to the quantitative determination of the capital requirements for insurers and the own funds necessary to cover them. These capital requirements are linked to the main risks to which they are exposed: market risks, insurance risks, counterparty default risk and operational risk. Pillar II addresses the promotion of sound governance practices and risk management, with insurers using self-assessment tools to gauge the most relevant risks they face, so they can introduce qualitative elements into their management decisions, as well as risks that have not been incorporated into the standard model developed in Pillar I. Finally, Pillar III provides guidelines for transparent, adequate and timely reporting to markets and supervisors.

The ORSA is a key component of a risk-based capital framework as it brings together governance and capital management. ORSA consists of a set of processes and procedures used to identify, evaluate, manage and report the short- and long-term risks that an insurer faces or may face. With ORSA, insurers can estimate their own capital requirements based on their own approach and assumptions, in order to determine the necessary own funds required to meet their global solvency needs.

The objective of the ORSA process is to ensure and preserve an adequate relationship between risk appetite, risk profile and the solvency level of the insurer. This alignment enables insurers to strengthen their strategies and develop action plans, which will allow them to face any adverse economic scenario in the future. This, in turn, contributes to the stability of the entity and the insurance system as a whole.

In this regard, as part of the ORSA process, insurers should estimate the funds necessary to cover their risks, considering a financial balance. This process involves medium-term capital planning that allows them to maintain an adequate buffer for future solvency needs. Additionally, the projections and the capital level defined as the objective by the insurer should be in line with the inherent risks of its activities, the economic environment in which it operates, the quality of its corporate governance and integrated risk management systems, its strategic and/or business plans, its risk appetite framework, fluctuations in the jurisdiction's economic cycle, the quality of available capital and the real possibilities of obtaining additional resources if necessary. The assessment process ultimately concludes with the determination of whether there is an appropriate consistency between the risk profile and the solvency level.

ORSA emphasises the board's responsibility to ensure that the insurer maintains the capital required to implement its strategy. Furthermore, it clearly establishes the role of risk management in the insurer's operational management and strategic planning.

Although ORSA has not yet been explicitly defined within the current regulatory framework for insurers, elements of existing regulations relating to risk management, risk appetite and capital needs will be added to the requirements, with additional details and precision where needed, so the ORSA requirements are clear and comprehensive.

#### Benchmarks consulted

In the development of the proposal for the ORSA process for the Peruvian insurance market, a review was conducted of how other countries have implemented it. To do this, supervisors from Mexico and Chile were contacted and responded to the inquiries made by the technical team of the SBS. In addition, the regulatory framework established for ORSA requirements in other jurisdictions was identified, as summarised below:



- EU: Directive 2019/138/EC of the European Parliament and of the Council of 25 November 2009, Articles 45 and 246.4, and guidelines for ORSA.
- Mexico: Insurance and Surety Institutions Law (LISF), published on 04.04.2013, in which the Solvency II framework was adopted for insurance and surety companies in Mexico and the entry into force of Pillars II and III was established from 04.04.2015 and of Pillar I from 01.01.2016. Circular Única de Seguros y Fianzas (CUSF), published on 12.19.2014, establishes guidelines for Pillar II in its Titles 3 and 12.
- Chile: General Rule No. 408 of 31 March 2016, issued by the Superintendence of Securities and Insurance (SVS), which modified General Rule No. 309, establishing corporate governance principles in primary insurance and reinsurance entities in the Chilean insurance market.
- United States/NAIC: Risk Management and Own Risk and Solvency Assessment Model Act (#505), which establishes the requirement for the ORSA process and came into effect on 1 January 2015. NAIC's ORSA Guidance Manual provides information for insurers to conduct their ORSA and document risk policies and processes.

#### Capturing the specificities of the Peruvian market

The SBS has proposed that an initial pilot of the ORSA process be carried out. For this purpose, a document titled "Risk and Solvency Self-Assessment Guide" has been developed, containing a set of guidelines for the execution of this process, as well as the details of the structure and minimum content of the ORSA report that insurers should prepare. Additionally, this guide defines the SBS' expectations of what is to be achieved through the ORSA process, which is expected to be progressively implemented by insurers. Furthermore, although insurers are free to choose the methods and processes for projecting their various accounts and components of the financial balance, it is proposed that they be provided with an Excel template along with instructions. This is intended to offer them a minimum and organised structure. As a result, insurers will present homogeneous structures in their projections, enabling better assessment and comparison with their peers.

#### 5.4.5 Quantitative vs qualitative solvency requirements

- 330. The qualitative solvency requirements, in terms of governance and risk management, make it possible to ensure a comprehensive view of the solvency of the insurer and in particular the internal evaluation of risks and solvency. This view allows the supervisor to assess the prospective solvency of the insurer over a given period of time by considering all the risks, in particular the risks not taken into account in the quantitative solvency requirements.
- 331. Negotiations with insurers in the context of impact studies may lead to simplifications in the quantitative solvency requirements. Reinforced measures in the qualitative solvency requirements will be taken depending on the simplifications adopted.

#### 5.4.6 Capital add-on as a supervisory tool

- 332. The ability to require a capital add-on is a supervisory tool that should allow a supervisor to strengthen an insurer's solvency. The use of this leverage is possible in the following cases:
  - When the insurer's risk profile deviates from the assumptions used to calculate the standard quantitative solvency requirements formula;
  - When the supervisor considers that the insurer's system of governance is not effective and has shortcomings;
  - When the insurer is taking excessive risks in its business model; and

Public



- When the measures foreseen in the ORSA to remedy solvency deficiencies are not credible or unrealistic.
- 333. In the last two cases, the supervisor may require insurers to either add additional capital or reduce risk exposure.

#### 5.5 Disclosure solvency requirements

- 334. As outlined in ICP 20, public disclosure of material information is expected to enhance market discipline by providing meaningful and useful information to policyholders and to market participants to make decisions about providing resources to the insurer. Insurers should disclose, at least annually and in a way that is publicly accessible, appropriately detailed information on their:
  - Company profile; •
  - Corporate governance framework; •
  - Technical provisions; •
  - Insurance risk exposure;
  - Financial instruments and other investments; •
  - Investment risk exposure; •
  - ALM; •
  - Capital adequacy;
  - Liquidity risk; and •
  - Financial performance.
- 335. More specifically, disclosures about the insurer's capital adequacy should include information on:
  - Its objectives, policies and processes for managing capital and assessing capital adequacy;
  - The solvency requirements of the jurisdiction(s) in which the insurer operates; and .
  - The capital available to cover regulatory capital requirements. If the insurer uses an internal • model to determine capital resources and requirements, information about the model is disclosed.
- 336. It may be useful if the insurer discloses information to allow market participants to assess the quantity and quality of its capital in relation to regulatory capital requirements. Information about objectives, policies and processes for managing capital adequacy help promote understanding of risks and measures that influence the capital calculation and the risk appetite that is applied. Disclosures may include qualitative information about the insurer's management of capital regarding:
  - Instruments regarded as available capital; •
  - Key risks and measures that influence the capital calculation; and •
  - The insurer's risk appetite. •

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- 337. It may be useful if the disclosures include a description of any variation in the group as defined for capital adequacy purposes from the composition of the group used for GPFR.
- 338. ICP 20 states that supervisors require that insurers disclose reasonably foreseeable and material insurance risk exposures and their management, including:

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- The nature, scale and complexity of risks arising from its insurance contracts;
- The insurer's risk management objectives and policies;
- Models and techniques for managing insurance risks (including underwriting processes);
- Its use of reinsurance or other forms of risk transfer; and
- Its insurance risk concentrations.
- 339. Subject to market maturity and resource availability, some supervisors may opt for tailoring the requirement to their specific market conditions. For instance, jurisdictions in earlier development stages may implement simplified reporting for smaller insurers and adopt phased implementation to ease the transition. Additionally, some supervisors may focus on the material risks most relevant to policyholders and other key stakeholders in their jurisdictions.



# 6 Summary of case studies

# 6.1 Bermuda

Pre-RBS model	Greater of
	Greater of flat minimum capital requirement and a percentage of net premiums written and reserves (respectively)
Drivers to change	<ul> <li>Alignment with international standards and global best practices</li> <li>Achieving equivalence/recognition from other insurance supervisors</li> <li>Tapping into international markets</li> </ul>
General considerations	Market sophistication; Significance of reinsurance market; Motivation of key stakeholders
Models considered	US RBC, EU Solvency II, and the SST
Timing of transition	2002 - 16; Implementation in phases (ORSA since 2010, Group Supervision since 2011)
Implementation approach/ Project management	Internal development; Staff development; Industry engagement; Legal Framework <ul> <li>Project team</li> <li>Detailed project plan</li> <li>Appointment of additional skilled resources</li> <li>Upgrading of technology infrastructures</li> <li>Consultations and field-testing exercises</li> <li>Legislation drafting</li> </ul>
RBS regime implemented	Stress & factor-based; Internal model
Challenges	<ul> <li>Applying proportionality</li> <li>Meeting the deliverables as planned due to conflicting priorities</li> <li>Availability of data and data quality</li> </ul>

# 6.2 Brazil

Pre-RBS model	Fixed
	Solvency I; SCR was the maximum between the solvency margin and the capital value as regulated
Drivers to change	<ul> <li>Adhering to international best practices</li> <li>Alignment with international standards</li> <li>Development of the local industry</li> </ul>
General	European Commission's adoption of equivalence decision of the solvency
considerations	regime in Brazil; Qualification of the project team
Models considered	US RBC and EU Solvency II
Timing of transition	2008 – ongoing; based on 2004/2005 actuarial research
Implementation approach/ Project management	<ul> <li>Alignment with international standards (ICPs 17, 7, 8, 10 and 16); Pillar III disclosure of accounting and solvency information for stakeholders</li> <li>Upskilling of actuarial skills</li> <li>Draft legislation</li> <li>Internal field-testing with data submitted</li> </ul>
	<ul> <li>Internal technical discussions and staff training</li> </ul>
RBS regime implemented	Factor-based plus
Challenges	Staff training



		•	Industry support
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# 6.3 Chinese Taipei

Pre-RBS model	Greater of		
	A balance of admitted assets minus liabilities equal to or greater than		
	three times the deposit bond		
Drivers to change	Adhering to international best practices		
_	Alignment with international standards		
	Tapping into international markets (WTO)		
General	Legislation reform; Accuracy of reporting; Supporting mechanisms such		
considerations	as appointed actuaries and external audits		
Models considered	US RBC, IAIS ICS		
Timing of transition	2003 – ongoing; Implementation in phases (ORSA since 2015)		
Implementation	Template and manual; Intervention measures; Industry training;		
approach/	Supporting measures; Education initiatives; Regulatory system		
Project management	Cross-sectional working group		
	Collection and review of data		
	ALM and Industry-specific education and training		
	Dedicated task force for test run and regulatory reform		
RBS regime	Factor-based Plus Ongoing transition to		
implemented	Stress & factor-based		
Challenges	Measurement of equity risk and delayed reflection caused by market		
	volatility		
	Double supervision indicators to better assess insurers' capital		
	adequacy		

# 6.4 Croatia

Pre-RBS model	Factor-based
	Solvency I, a standardised formula known as the "solvency margin" or
	"minimum capital requirement"
Drivers to change	Alignment with the EU standards
	More effective operation within the EU single market
General	Membership in the EU; Harmonization of legal framework; Regulatory
considerations	infrastructure; Insurance industry preparedness in terms of expertise,
	data requirements, IT models, education
Models considered	EU Solvency II
Timing of transition	2005 - 2013 (quantitative impact studies in 2005 - 2011; QIS since 2011)
Implementation	Risk management systems; Capital Adequacy Assessment; Reporting
approach/	and Disclosure Standards
Project management	Solvency II working group headed by a steering committee
	<ul> <li>Creation of regulations and analysis of the requirements</li> </ul>
	• Dedicated task forces for valuation, SCR, MCR, second/ third Pillars,
	Own funds, groups and other provisions
	QIS incl. internal model development and stress-testing
	IT Infrastructure and data management
	Training and education
RBS regime	Stress & factor-based
implemented	
Challenges	Complex requirements and proportionality



•	Data accuracy and reliability
•	Increased capital requirements
•	Organizational changes and cultural shift
•	Implementation costs and effective communication

# 6.5 Japan

Pre-RBS model	Factor-based
	Based on solvency margin ratio (SMR) and J-GAAP; Capital requirement
	calculated by multiplying the exposure value by predetermined factors
Drivers to change	Reflection of insurers' medium- to long-term risk structure
_	Sophistication or enhancement of their risk management
General	Preparedness of insurers; Understanding by external stakeholders;
considerations	consolidated group-wide capital standard for IAIGs
Models considered	EU Solvency II, IAIS ICS
Timing of transition	2010 – ongoing*2025; based on a study team report in 2007;
_	implementation in phases (ORSA since 2015)
Implementation	Economic value-based valuation and supervision; ERM framework
approach/	Insurance Monitoring Office
Project management	• Training of staff and hiring the external experts (actuaries and CPAs)
	Involvement in the development of ICS in the IAIS
	Interactively working with wide range of stakeholders
	Published tentative decisions on fundamental solvency requirements
	Plans to continue steady preparations and examinations
RBS regime	Stress & factor-based; Internal model
implemented	
Challenges	Increased demand in expertise
-	Complexity associated with sophistication of risk measurement and
	management
	Implication on insurers under certain economic circumstances

# 6.6 Korea (Republic of)

Pre-RBS model	Factor-based	
	[2009] RBC regime equivalent to Pillar 1	
	[2016] Available capital is calculated with consideration given to the	
	correlations among insurance risk, market risk, interest rate risk, credit	
	risk, and operational risk	
Drivers to change	<ul> <li>Improve the financial soundness of insurers</li> </ul>	
	<ul> <li>Consolidate the own-risk-oriented approach</li> </ul>	
	Implementation of IFRS 17	
General	Improve financial soundness; alignment with revision of accounting	
considerations	standards; soft landing of new solvency regime	
Models considered	Solvency regimes from US, Japan and the IAIS ICS	
Timing of transition	2009 - 16 – 23; Implementation in phases (ORSA since 2017, K-ICS/	
	IFRS 17 since 2023)	
Implementation	Design of a master plan	
approach/	Launch a public-private international accounting preparation	
Project management	committee	
	Set up working groups comprised of supervisor and industry experts	
	Draft the supervisory standards based on consultations and QIS	



	Implementation of the K-ICS
RBS regime	Stress & factor-based
implemented	
Challenges	Complexity and diversification of calculation of risks

# 6.7 Malaysia

Pre-RBS model	Fixed
	Insurers are required to maintain admitted assets above its insurance liabilities at a prescribed margin.
Drivers to change	<ul> <li>Ensure that capital held by individual insurers commensurate with their risk profile</li> <li>Incentivise good risk management</li> <li>Enhance alignment with global best practices</li> </ul>
General considerations	<ul> <li>Greater flexibility for insurers to operate at different risk levels in line with their business strategies</li> <li>Transparency through explicit quantification of prudential buffers</li> <li>Early warning signal of any deterioration in capital adequacy level to ensure prompt supervisory intervention</li> </ul>
Models considered	IAIS ICP and capital frameworks of other jurisdictions that have implemented RBS regime
Timing of transition	2001 – 09
Implementation approach/ Project management	<ul> <li>A working committee with supervisor and industry experts</li> <li>A project plan to design the framework with the support of a multidisciplinary team</li> <li>Internal and staff development</li> <li>Parallel run, consultation process and drafting of legislation</li> </ul>
RBS regime implemented	Stress & factor-based
Challenges	<ul> <li>Buy-in from stakeholders (internal and external)</li> <li>Concerns of disruptions from the implementation of the RBC Framework</li> <li>Availability of expertise to support the implementation of the RBC Framework</li> </ul>

### 6.8 Mexico

Pre-RBS model	Fixed
	Solvency I-like model
Drivers to change	<ul> <li>Evaluate the risk exposures of insurers more accurately</li> <li>Foster competition and innovation within the industry</li> <li>Enhance the effectiveness of regulatory supervision while reducing the regulatory burden</li> <li>Strengthen policyholder protection</li> </ul>
General considerations	Orderly and efficient transition; research on various risk-based solvency regimes; dialogue with stakeholders
Models considered	Solvency II, United States Solvency Modernization Initiative (SMI) and the SST
Timing of transition	2009 – 13 – 18
Implementation approach/	CNSF followed an incremental approach, starting with the implementation of the ORSA, followed by new legislation introducing changes to the three



Project management	<ul> <li>elements of the quantitative, qualitative and disclosure elements of the framework.</li> <li>Creation of a project team</li> <li>Development of a project plan</li> <li>Resourcing (human &amp; IT)</li> <li>Consultations and QIS</li> </ul>
RBS regime implemented	Factor-based plus
Challenges	<ul> <li>Securing policymakers buy-in</li> <li>Balancing resources for supervisory activities with the resources needed for the development of the new regulatory framework</li> <li>Culture change and skill development (industry and supervisor)</li> <li>Legal and institutional reforms</li> <li>Focus on pillar I led to uneven development of pillar 2 and 3</li> </ul>

### 6.9 Peru

Pre-RBS model	Factor-Based	
	Capital requirements are based on Solv	lvency l
Drivers to change	Improve the capital adequacy measure enhance policyholders' protection	ement, and risk management, to
General considerations	Migration towards a risk-based capital reference models and adapting to the F	model; evaluation of the world's Peruvian reality
Models considered	Solvency II, SST, Mexico's risk-based s internal capital adequacy assessment p	solvency regime and the Peruvian process for financial systems.
Timing of transition	2008 – 23*	
Implementation	SBS prioritised the implementation of the quantitative and qualitative	
approach/	elements, followed by disclosure requirements.	
Project management	<ul> <li>The implementation was guided by a 5-year roadmap.</li> </ul>	
	<ul> <li>Institutionalization of the project</li> </ul>	
	Preparation of the industry:	
	Roadmap was presented to the ind	dustry during the design phase;
	Timely and close communication d	luring the QIS
	<ul> <li>Transparency throughout the proce</li> </ul>	ess
	<ul> <li>Annual review of the roadmap.</li> </ul>	
RBS regime	Factor-based plus Ong	going transition to
implemented	Stre	ess & factor-based
Challenges	Congress approval for the change	in law
-	Availability of information / data	
	Quality of information / data	

# 6.10 Singapore

The table below provides a summary of the enhancements made in 2020 to the RBS regime which was implemented in Singapore post 2004

Enhancement of RBS	Predominantly factor-based
model	
Drivers to change	<ul> <li>Enhanced policyholder protection;</li> <li>Improvement of RBSup</li> <li>Alignment with international standards</li> </ul>
	Incentivise long-term investment & products



	Clear solvency intervention level
	Allow for diversification benefits
General considerations	<ul> <li>The RBC 2 framework was designed to strengthen risk management within the insurance sector and protect policyholders more effectively. The implementation model also considered:</li> <li>Strong engagement with professionals, industry bodies, board &amp; senior management team of insurers;</li> <li>Analytics capabilities for micro and macro-prudential surveillance;</li> <li>Enhanced requirements on roles of Appointed and Certified Actuaries;</li> <li>Group Supervision Framework (both from host and home supervisors' andle)</li> </ul>
Models considered	IAIS ICP. IAIS ICS
Timing of transition	2012 - 20
Implementation approach/ Project management	Singapore adopted a consultative approach in developing its RBC and RBC 2 frameworks, involving extensive engagement with industry stakeholders. In implementing RBC 2, the Monetary Authority of Singapore (MAS) conducted three rounds of formal consultations from 2012 to 2016, along with closed-door discussions and feedback on draft specifications. MAS also conducted several QIS and parallel runs, starting in 2014, to assess the framework's effects on insurers and ensure smooth implementation. RBC 2 became effective in 2020.
RBS regime	Stress & factor-based
Implemented	RBC 2 introduced more comprehensive risk coverage and calibrating the solvency requirements to a 99.5% VaR over a one-year time horizon and explicit charges for liability, asset mismatching and concentration risk.
Challenges	<ul> <li>Stakeholder engagement and buy-in – required continuous engagement with stakeholders</li> <li>Valuation and capital computation - MAS conducted thematic inspections, impact studies, and parallel runs, which allowed insurers to familiarize themselves with the new RBC 2 requirements before full implementation</li> <li>Preventing unintended consequences - the framework was regularly reviewed to ensure it remained relevant, responsive, and aligned with international standards</li> </ul>

# 6.11 Switzerland

Pre-RBS model	Factor-based
	Solvency I (similar to the EU solvency regime at that time)
Drivers to change	Market volatility; Stability of life insurers with policies for future retirement pensions; Policyholder protection
General considerations	A market valuated balance sheet as basis; the EU was also beginning the transition to an RBS regime at the time.
Models considered	<ul> <li>At the beginning of the development of the SST there was almost no RBS regime in the world as "reference point".</li> <li>Collaboration with industry and academia, with field- testing.</li> </ul>
Timing of transition	2002 – 11



Implementation approach/ Project management	<ul> <li>First implemented the quantitative capital requirement.</li> <li>A dedicated task force introduced the foundations of the SST.</li> <li>The task force run field-tests with the industry.</li> <li>Legislation was revised in parallel to introduce SST.</li> <li>Implementation of the SST over a 5-year period.</li> </ul>
RBS regime	Standard model; Internal model
Challenges	No pre-existing RBS regime as reference point
Challongeo	Tight timeframes for implementation

# 6.12 USA

Pre-RBS model	Greater of
	Mitigate or eliminate some risks in the insurance business through guardrails around or restrictions on insurers' activities
Drivers to change	Evaluation of lessons learned from the 2007–08 global financial crisis; review of international developments regarding insurance supervision, banking supervision and international accounting standards, as well as their potential use in U.S. insurance regulation.
General considerations	Considering the variety of ways to implement all of the aspects of a regulatory regime, U.S. regulators decided that combining both financial and market regulation is the best means to achieve their regulatory mission.
Models considered	US RBC; GAAP; IAIS ICP; IAIS ICS
Timing of transition Implementation approach/ Project management	<ul> <li>2008—13—ongoing*; implementation in phases (ORSA since 2015)</li> <li>Through the NAIC, state insurance regulators in the U.S. embarked on the SMI to perform a critical self-evaluation to improve the insurance solvency regulatory framework in the US</li> <li>State insurance regulators relied extensively on collaboration with each other and provided leadership in the NAIC groups responsible for addressing the SMI recommendations.</li> <li>As directed by state insurance regulators, the NAIC modified a variety of Model Regulation Acts.</li> <li>The NAIC has added dedicated actuarial staff to assist state insurance regulators in training and review of principle-based reserving practices.</li> <li>State insurance regulators approved the use of a pilot study using the NAIC as a repository, prior to the effective date of required ORSA filings. (adoption of RM and ORSA Model Act in Sep 2012, ORSA</li> </ul>
RBS regime	report required since 2015) Stress & factor-based
implemented	Excerpt from the white paper – The life RBC formula has already been updated to include some stochastic modelling in the RBC charge calculation for certain annuity products ("C-3 Phase 2 – interest rate and market risk – for variable annuity guarantees), and more work is under way to expand the use of models to other life insurance products as appropriate and to catastrophe risk for property/casualty RBC.
Challenges	<ul> <li>An attempt to create a "one-size-fits-all" regulatory framework for all functions of regulation (beyond solvency) does not make sense due to the great differences found between regions and states.</li> <li>A competitive-market framework complements solvency regulation, which is a national system of state-based regulation where the</li> </ul>



state insurance regulator.
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# 6.13 Zimbabwe

Pre-RBS model	Greater of
	Flat MCR depending on the class of business or such other amount as
	determined by an actuary in the case of life insurer or based on premium
	written for non-life, whichever is greater
Drivers to change	need to enhance policyholder protection;
	ensuring a safe, vibrant and sustainable insurance industry;
	reward insurers for better risk management practices;
	aligning local solvency requirements with international standards
General	Based on a survey, the Commission developed a risk management and
Considerations	corporate governance directive; appropriate dry to ensure the frameworks
	were relevant to the local Zimbabwean market.
Models considered	Regional and international best practices
Timing of transition	2015 - ongoing
Implementation	Zimbabwe adopted a phased implementation approach. Starting with the
approach/	qualitative elements, followed by the quantitative elements and finally
Project	disclosure (ie 2-1-3), to support involvement and adequate resourcing of
management	industry.
	Set up internal multidisciplinary project team
	Development of a project plan with an actuarial consultant
	Engaged and consulted relevant stakeholders
DDO	Legislation drafting
RBS regime	Factor-based plus
	a l'activation de la character de la companya de la
Challenges	Limited actuarial skills
	Delays due to Covid-19
	Lack of a deep bond market to assist in the estimation of appropriate
	discount rate and factors



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