INTERNATIONAL ORGANISATION OF PENSION SUPERVISORS

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IOPS Toolkit for Risk-based Pensions Supervision

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Introduction

The International Organisation of Pension Supervisors (IOPS) is an independent international body representing those involved in the supervision of private pension arrangements. The Organisation currently has around 80 members and observers, representing over 75 countries worldwide - from Australia to Zimbabwe - covering all levels of economic development and bringing together all types of pension and supervisory systems.

The IOPS Toolkit for Risk-based Supervision was officially launched in December 2010. It is designed to assist IOPS members introducing risk-based supervision (RBS). The modules provide practical guidance, with the case studies detailing how RBS is implemented in different countries.

The Toolkit draws upon the existing work of the IOPS and its members, the OECD Working Party on Private Pensions, the World Bank, the International Association of Insurance Supervisors (IAIS), the Basel Committee on Banking Supervision (BCBS), the International Organization of Securities Commissions (IOSCO), and the Committee of European Insurance and Occupational Pensions Supervisors (CEIOPS).

The IOPS Toolkit for Risk-based Supervision can be accessed at the following address: **www.iopsweb.org**

IOPS Toolkit for Risk-based Pensions Supervision

The IOPS Toolkit for Risk-based Pensions Supervision is designed to assist IOPS members introducing risk-based supervision (RBS).

Risk-based supervision (RBS) is a structured approach which focuses on the identification of potential risks faced by pension plans or funds and the assessment of the financial and operational factors in place to minimize and mitigate those risks. This process then allows the supervisory authority to direct its resources towards the issues and entities which pose the greatest threat.

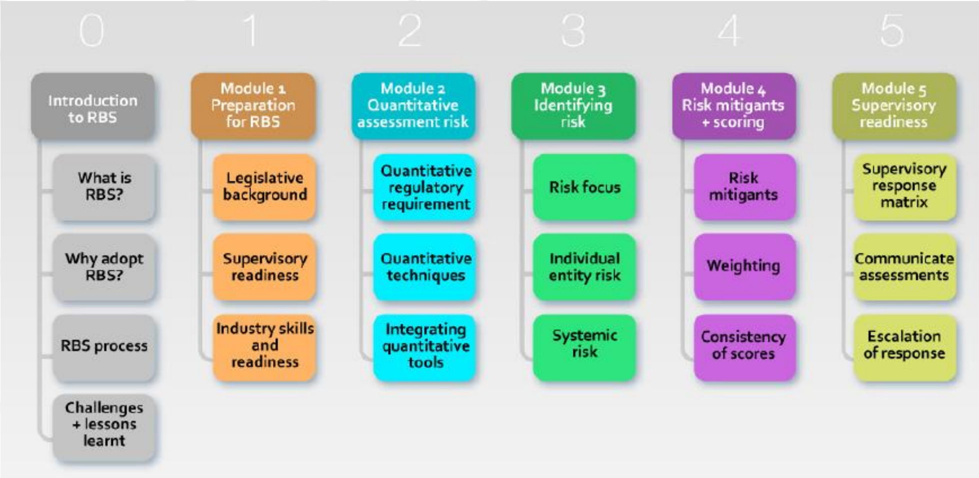
The Toolkit is broken down into modules providing practical guidance and includes comprehensive case studies to illustrate how supervisors have dealt with the challenges inherent in implementing the concepts and techniques of risk-based supervision.

Toolkit Modules:

- **Module 0**: Introduction to Risk-based Supervision (RBS): definition and reasons for adopting RBS, how to apply the approach, challenges and lessons learnt.
- **Module 1**: Preparation for Risk-based Supervision: preparing the legislative background, supervisory readiness and industry skills.
- **Module 2**: Quantitative Risk Assessment Tools: Quantitative tools for measuring risk in defined benefit (DB) and defined contribution (DC) pension funds and how to integrate these in overall risk assessments.
- **Module 3**: Identifying Risks: individual entity risk focus, factors and indicators and systemic risk.
- **Module 4**: Risk Mitigants and Risk Scoring: assessing risk on a net basis, weighting in risk scoring models and consistency of scores.
- **Module 5**: Supervisory Response: supervisory response matrix, communicating risk assessments and escalation of supervisory response

Modules 1 and 2 attempt to step back and look at issues which pension supervisory authorities may wish to consider as they plan and prepare for the introduction of a risk-based supervisory approach. Module 1 provides a checklist for pension supervisory authorities to consider whether a supportive legislative environment is in place, whether the pension supervisory authority has the necessary powers and information to undertake risk-based supervision, and how ready the authority itself and the industry it oversees are to make the move to risk-based supervision, which in turn will determine the planning and pace of change. Module 2 looks at the types of quantitative tools which can be integrated into a risk-based system, with worked examples of each provided.

Modules 3, 4 and 5 look at the risk-based process in more detail.



Module 0: Introduction to Risk-based Supervision

Definition

The introduction to RBS discusses how RBS can be combined with a more traditional, 'rules-based' approach and how these should be blended according to the nature of the pension system, the capacity of the supervisory authority, and the level of development of the pension industry.

Why Adopt?

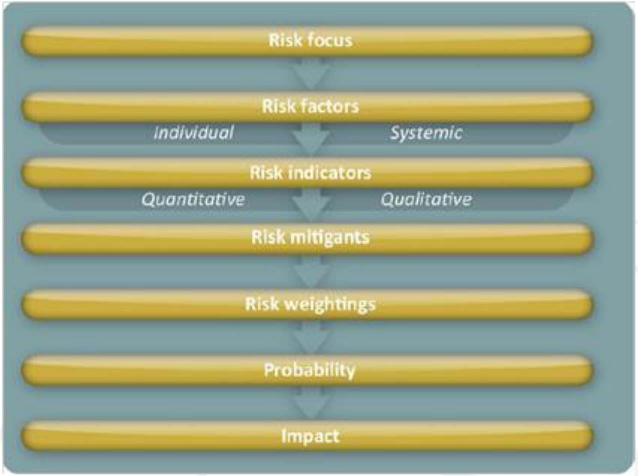
RBS has the advantages of maximizing the use of scare resources, increasing the possibility of spotting significant problems before they arise and encouraging pension funds to improve their own risk management. It has been adopted by IOPS members to improve efficiency and adapt to changes with the supervisory structure, the pensions industry and the financial system in general.

Application

Applying RBS consists of the following steps – which will need to be adapted to county specific circumstances.

1. Establishing the objectives of the pension supervisory authority and consequently its risk focus
2. Identifying the risks faced by individual funds and the pension industry that bear on the pension supervisory authority's objectives
3. Establishing a methodology for mapping and weighting risks faced to the authority's objectives
4. Establishing a quality assurance process
5. Establishing a methodology for allocating supervisory resources based on the risk assessments

Steps in Risk-based Supervision Process



Lessons Learnt

The introduction to the Toolkit finishes by summarising IOPS members' experiences when introducing RBS, outlining the challenges they encountered (from gathering the right information, to how to look at systemic as well as individual pension fund risk, to changing the culture of the supervisory authority), and the lessons they have learnt – the most important being that RBS is worth doing.

Module 1: Preparation for Risk-based Supervision

Moving to RBS involves changes at both the pension supervisory authority and the pension industry it oversees. Against this background, this first module in the IOPS Toolkit discusses some of the foundational issues of RBS. It outlines some of the issues that should be considered before embarking on the implementation of RBS, notably relating to the legislative environment and the readiness of the pension supervisory authority and the pension industry. The module is accompanied by a questionnaire to help assess preparedness and to identify the critical path for implementation and the pace at which RBS can be rolled out.

Section 1 of Module 1 discusses the **legislative background** needed for RBS. RBS requires a legal foundation that both enables it to be undertaken and provides the pension supervisory authority with the appropriate powers to implement it. Changes to pension legislation may be required to ensure that the regulatory environment and the powers and duties of the supervisory authority allow for such a new approach to be adopted.

This section looks at:

- **Legislative Approach** required for RBS – including a discussion of prudential regulation and the prudent person rule;
- **Legislative support** required for RBS – including setting supervisory objectives and enhancing risk-based supervisory powers;
- **Risk-based legislation** itself.

Section 2 considers **supervisory readiness** and the preparation which pension supervisory authorities need to undertake whilst moving towards a risk-based approach. RBS impacts on the internal structure of the pension supervisory authority as well as on management/leadership demands. Staff reorganisation and training will be required – sometimes extensive. In addition the pension supervisory authority will need to assess its information collection to determine whether this is appropriate for RBS.

This section looks at:

- **Organisational alignment and strategic planning**;
- **Supervisory skills and culture**;
- **Number and mix of staff -** including the organization structure of the authority
- **Information collection and processing** – examining information required for RBS, sources of information and the organization of information collection

Section 3 considers **industry skills and readiness**. RBS not only requires changes in terms of the skills and culture of the pension supervisory authority, but also new practices to be adopted by the pension industry. Under RBS, the various participants in the pension fund management process are required to make their own judgments, to implement appropriate risk management practices, and to be responsible for their decisions. RBS is a journey that should be shared by all parties involved and requires significant communication and guidance from the supervisory authority.

This section looks at:

- **Communication and guidance** by the supervisory authority towards industry practitioners
- **Quality of supporting professionals**
- **Capital market development**

Module 2: Quantitative Risk Assessment

Module 2 of the IOPS Toolkit deals with the tools that can be used by a pension supervisory authority in the quantitative assessment of risk. Such quantitative assessments can play an important part in the overall risk-assessment process which is at the heart of risk-based supervision. Poor results from these quantitative tests imply higher levels of residual risk at the entity which is being analyzed, which the supervisory authority would then factor into its overall risk analysis or risk score.

Section 1 looks at the quantitative regulatory requirements that provide the foundation for the quantitative assessment of risk.

For **Defined Benefit** funds these include: valuation requirements; minimum funding requirements; factor-based solvency margins; and stress-related solvency margins.

For **Defined Contribution** funds these are: investment limits: minimum return limits (guarantees): value at risk limits: and target-based risk measures.

Risk-based supervision can incorporate these quantitative regulations into the overall risk-assessment process in the following three ways:

- combining a 'rules-based' and a 'risk-based' approach – compliance with quantitative restrictions is checked, and if not met a lower score would be factored into the overall risk assessment of the fund;
- quantitative requirements can be made more 'risk-based' by testing whether compliance would still hold in adverse circumstances (i.e. by stress testing) - the results of these stress-tests would then be incorporated in the the overall risk score;
- where the quantitative regulations are already risk-based, compliance with these risk-based regulations would be fed into the overall risk score.

Section 2 discusses the following techniques for the quantitative assessment of risk:

- comparison of valuation assumptions
- analysis of surplus
- roll-forward calculations
- duration analysis
- sensitivity testing
- deterministic stress testing
- stochastic stress testing
- value at risk (VaR) calculations

Section 3 goes on to discuss **integrating quantitative tools into risk assessments**– stressing that qualitative judgment is also required to assess the results of these quantitative tests effectively, and as some factors and issues do not easily lend themselves to qualitative analysis.

Module 3: Identifying Risks

Having collected a range of data (see Module 1), including the results of quantitative tests (see Module 2), the pension supervisory authority needs to develop a method for organising and analysing this information in order to establish which risks pose the greatest threat to the supervisory authority meeting its goals. The pension supervisory authority needs to first decide which areas to focus on – based on its objectives and resources - and then identify the main risks in those areas, as well as indicators which can help detect if the risk will materialize. Risk has to be considered on an individual entity and systemic basis.

This module is designed to help supervisory authorities move towards risk-based supervision in order to identify the appropriate risks. The Module provides suggestions of risks which may be considered – mapping a supervisory authority's objectives and risk focus fit together with the risk factors and risk indicators to be followed. Details of these steps will be provided in this module, including examples from IOPS members who are already employing a risk-based approach.

Section 1 discusses the risk focus of the pension supervisory authority, as, given limited resources, supervisors must establish their main areas of focus before risks can be identified and managed. This section goes on to discuss how the risk focus will be driven by:

- supervisory objectives;
- nature of pension system (whether Defined Benefit or Defined Contribution);
- risk appetite.

Section 2 looks at individual entity risk factors that could lead to failure to meet the supervisory authority's objectives. These are usually classified in terms of the conventional risks that pension funds face: market risk, credit risk, actuarial risk, operational risk, compliance risk, governance risk, financial crime risk, outsourcing risk, and so on. Risk indicators are also discussed – i.e. those activities or events that are likely to result in the risk materializing. This section discusses how indicators can be quantitative and qualitative in nature.

Section 3 then discusses systemic risk – i.e. risk that affects all or most supervised entities. Risks can be identified and assessed on two levels, on a 'micro' and a 'macro' basis – taking a 'bottom up' approach and attempting to identify risks at the level of individual supervised entities, or a 'top down' approach looking a risk on a sector or thematic basis. If all entities of a particular type are subject to this risk, it is not productive to deal with this particular risk on a fund by fund basis; it should be dealt with by improving the entire pension system. This section discusses:

- when systemic risk is important (e.g. during the early stages of the development of the pension system, during times of economic difficulty, or when a supervisor is trying to oversee hundreds or even thousands of pension funds);
- how systemic risk can be identified (via surveys, complaints, early warning systems etc.) and;
- integrating system risk into overall risk assessments (e.g. via pre-populating risk scores).

Module 4: Risk Mitigants and Risk Scoring

Having identified the major risks to meeting its supervisory objectives (see Module 3), the pension supervisory authority needs to consider possible mitigants and controls so that risk is assessed on a net rather than a gross basis. The authority then needs to establish a method for weighting these risks, according to the probability of their occurrence and their importance and impact on the goals of the supervisory authority – i.e. a risk scoring model has to be devised.

Some pension supervisory authorities derive individual risk-scores for the entities which they oversee. However, it may not be feasible for supervisory authorities to derive an individualized risk score for every single supervised entity – particularly in pension systems where many thousands of funds operate. In such cases, supervised entities are categorized in a simplified way – usually in terms of their size or impact of failure– with the funds which have the greatest 'impact' receiving the greatest supervisory attention (as described in Module 5).

This module is designed to help supervisory authorities who wish to build a risk-scoring model which will be used to guide their supervisory actions.

Section 1 looks at risk mitigants and how to assess risk on a net basis. Risks can be managed in a variety of ways, including good corporate governance, a capable senior management team, well-documented procedures, strong internal controls, an independent internal audit function, effective risk management processes, strong actuarial and financial analysis capabilities, and comprehensive external audits. Risk can also be mitigated on a system-wide basis. However, the most important factor is a pension fund's risk-management system.

Section 2 considers the how to build risk scores in more detail, looking at the following:

- Weightings - assigned to different risk categories and controls, driven by external factors, the nature of the pension system, as well as the nature, scale and complexity of the entity's risk being assessed.

- Probability - the overall riskiness of the fund is often rated according to the probability of the assessed risks occurring and the impact which the fund would have on the pension system in general should anything go wrong. These steps can be considered separately or together. Probability can be assessed in a quantitative way, or more simply in a qualitative fashion (i.e. the risk score applied to each entity equating to the probability of problems occurring).
- Impact – most authorities simply use the size of the fund or entity to capture the damage that would be inflicted in the adverse event occurred.

Section 3 considers consistency of scores – which are usually checked by a central risk unit within the pension supervisory authority. One of the key decisions when building a risk-scoring model is determining how much influence the individual supervisor should have in devising risk scores vs. central units.

Module 5: Supervisory Response

A fundamental aspect of RBS is that a logical connection should be made between the outcome of any risk analysis undertaken (which is described in detail in Module 4 of the Toolkit) and the nature of the subsequent supervisory action taken in response. Pension supervisory authorities may wish to devise a response matrix to help determine and organize their supervisory action.

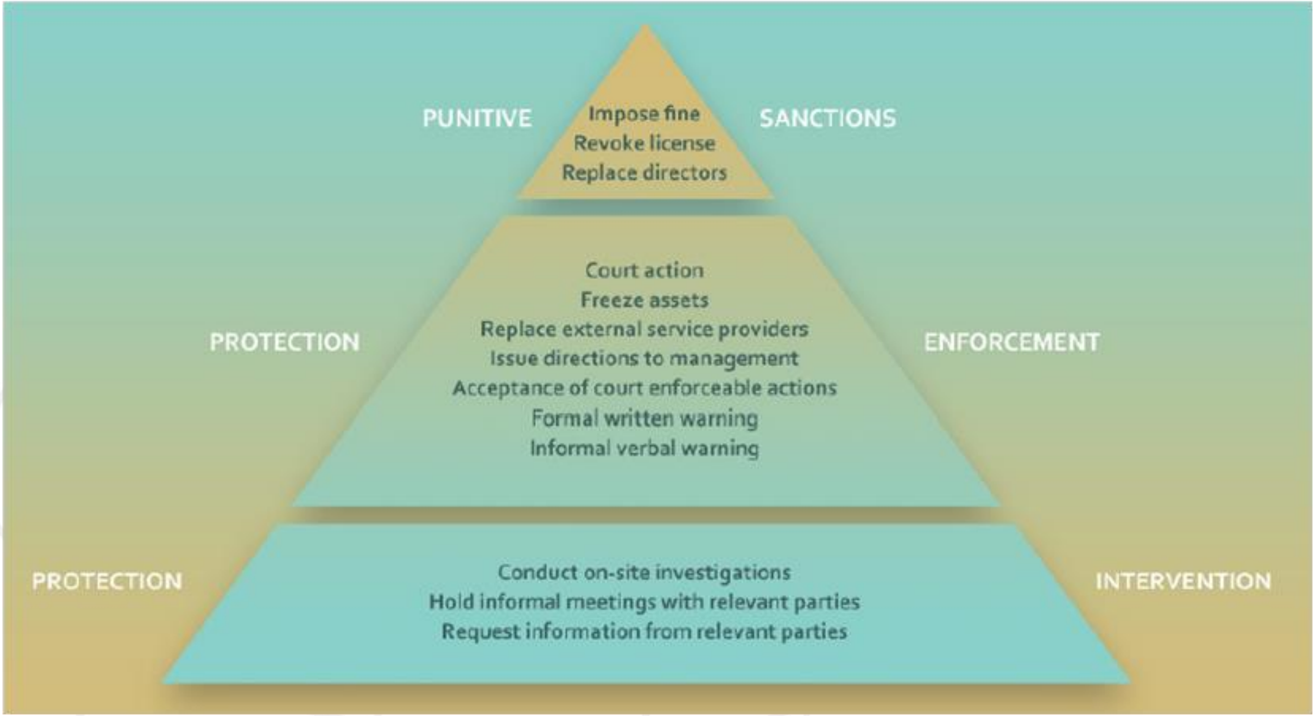
Once the supervisory authority has determined what supervisory action it should take in response to the level of risk identified and that response has been suitably communicated, the authority needs to determine how to monitor that any actions required from supervised entities are followed, how to adapt its own supervisory response accordingly and how to increase the supervisory pressure should the level of risk be seen to escalate. In order to carefully 'pitch' its initial response to a problem in a proportional and fair fashion, and then follow up in an appropriate way, supervisory authorities may wish to develop a 'enforcement pyramid'.

Section 1 discusses **supervisory response matrix**. The section examines responses to **Individual entity risks** (including examples of how to respond to high, medium and low risk cases) as well as responses to **systemic risk**.

Section 2 considers the **communication of risk assessments**, including whether and how much information on the supervisory assessment should be made known to the supervised entity, and to the public at large.

Section 3 considers the **escalation of the supervisory response** and how enforcement pyramids can be used to ensure that the supervisor adapts its approach appropriately, according to the level of risk posed and the response of the supervised entity itself.

Enforcement Pyramid



Case Studies and Resources

Case Studies

Along with the examples included in the Modules, case studies are provided for a number of IOPS members which have adopted a risk-based approach. These provide further detail of how a risk-based methodology has been developed to fit the unique circumstances in each country. Short video podcasts have also been provided during which supervisors from these countries explain their experiences.

Australia

Canada

Chile

Germany

Hungary

Kenya

Macedonia

Mexico

Netherlands

South Africa

Resources

The IOPS Toolkit for Risk-based Supervision also provides many resources for the pension supervisor.

A resources page on the Toolkit website provides PDF files of each module of the Toolkit to be downloaded as necessary, and graphics files used to illustrate examples and models are also available.

PowerPoint presentations are for each Module are provided along with short video podcasts in which supervisors explain their experiences in adopting risk-based supervision.

Contacts

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