INTERNATIONAL ORGANISATION OF PENSION SUPERVISORS

Toolkit for Risk-based pensions supervision

Module 1

Preparation for Risk-based Pensions Supervision

Risk-based Pensions Supervision provides a structured approach focusing on identifying potential risks faced by pension funds and assessing the financial and operational factors in place to mitigate those risks. This process then allows the supervisory authority to direct its resources towards the issues and institutions which pose the greatest threat.

The IOPS Toolkit for Risk-based Pensions Supervisors provides a 5-module framework for pensions supervisors looking to apply a system of risk-based supervision. A web-based format allows: a flexible approach to providing updates and additions; users to download each module separately as required; and a portal offering users more detailed resources, case studies and guidance. The website is accessible at www.iopsweb.org/rbstoolkit.

This document contains the guidance for **Module 1: Preparation for Risk-based Pensions Supervision.**

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I. INTRODUCTION

As outlined in the Introduction to the IOPS Toolkit for Risk-based Supervision, risk-based supervision (RBS) is a structured approach which focuses on the identification of potential risks faced by pension plans or funds[1] and the assessment of the financial and operational factors in place to minimise and mitigate those risks. This process then allows the supervisory authority[2] to direct its resources towards the issues and entities which pose the greatest threat.

A. Purposes

Moving to RBS involves changes at both the pension supervisory authority and the pension industry it oversees. Each country has some unique characteristics, whether the composition of its pension industry, maturity of financial markets, availability of professional services, the extent of consumer awareness, or depth of pension coverage, etc. In such a world "one size does not fit all" and it is not wise to superimpose the RBS framework from one country onto another, although the experiences of others will invariably be instructive.

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 check list to help assess preparedness and to identify the critical path for implementation and the pace at which RBS can be rolled out.

The perfect situation for adopting RBS will not exist in any country wanting to go down this route. Yet pension supervisory authorities do not have to wait until all conditions are fulfilled to begin to move towards such an approach. As discussed in the introduction to the Toolkit, the move from more traditional, 'rules-based' supervision to RBS can be gradual, with elements of both blended to formulate a supervisory approach which is suitable for particular circumstances. As the financial system evolves and improves (a wide range of securities become traded in highly liquid markets, well developed pensions industry develops offering investment services, administration, actuaries, etc.), the pension supervisory

[1] According to the OECD's taxonomy (OECD 2005), a pension fund is a legally separated pool of assets forming an independent legal entity that is bought with the contributions to a pension plan for the exclusive purpose of financing pension plan benefits. The plan/fund members have a legal or beneficial right or some other contractual claim against the assets of the pension fund. Pension funds take the form of either a special purpose entity with legal capacity (such as a trust, foundation, or corporate entity) or a legally separated fund without legal capacity managed by a dedicated provider (pension fund management company) or other financial institution on behalf of the plan/fund members.

A pension plan is a legally binding contract having an explicit retirement objective (or – in order to satisfy tax-related conditions or contract provisions – the benefits cannot be paid at all or without a significant penalty unless the beneficiary is older than a legally defined retirement age). This contract may be part of a broader employment contract, it may be set forth in the plan rules or documents, or it may be required by law. In addition to having an explicit retirement objective, pension plans may offer additional benefits, such as disability, sickness, and survivors' benefits.

[2] Pension supervisory authorities referred to in the IOPS Toolkit are defined as any entity responsible in whole or in part for the supervision of pension funds, plans, schemes or arrangements in a country, or the subdivision of a country, whether invested with its own personality or not.

authority can move more towards a risk-based approach, and eventually RBS will move towards international good practice. As discussed, this enables the supervisory authority to direct its scarce resources in a more structured, pre-emptive fashion, allowing the authority to be more efficient and manage risk better than under a more traditional, rules-based approach. Limited resources force supervisory authorities to prioritise in some way – RBS is a mechanism for helping them to do so more efficiently.[3]

The work plan for introducing risk-based supervision of the pension supervisory authority of Chile, Superintendencia Chile, comprised the following steps:

- 2005: get familiar with RBS
- 2006: diagnosis
- 2007: design
- 2008: development of framework legislation
- 2009:
  - Revision of methodology and improvement of supervision guides
  - Staff training (which included a visit to the Australian Prudential Regulation Authority)
- 2010: pilot implementation

[3] See Toolkit Introduction for further discussion.

B. Principles and Guidelines

Module 1: Preparation for RBS

Module 1 of the IOPS toolkit builds on the IOPS Principles of Private Pension Supervision (IOPS 2010)

Principle 1: Objectives
National laws should assign clear and explicit objectives to pension supervisory authorities

Principle 3: Adequate Resources
Pension Supervisory Authorities require adequate financial, human and other resources

Principle 4: Adequate Powers
Pension supervisory authorities should be endowed with the necessary investigatory and enforcement powers to fulfill their functions and achieve their objectives

Principle 5: Risk-based Supervision
Pension supervision should adopt a risk-based approach

The following annotations from the *IOPS Guidelines for Supervisory Intervention, Enforcement and Sanctions* (IOPS 2009a) also apply:

> 1.4 The legal framework that defines conditions and circumstances under which the pension fund supervisor must intervene should be flexible enough to enable the pension supervisor to undertake preventative, protective or punitive actions. Supervisory authorities should possess sufficient flexibility in order to be able to act pragmatically and to react in a timely (ideally pre-emptive) and efficient fashion to issues and problems which they encounter in their daily activities.
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> 2.1 It is of crucial importance that the pension supervisory authority possesses sufficient intervention, enforcement and sanction powers and maintains a range of means to undertake its duties and responsibilities in a timely and efficient manner. The supervisory authority needs to have the legal and operational capacity (such as actuarial expertise) to respond to perceived or developing risks, with legislation allowing for basic powers which can be exercised with varying degrees of intensity.
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> 2.3 Though not all powers may be used 'actively' it may still be useful for the supervisory authority to have such powers either to use in exceptional circumstances - thereby avoiding what could be time consuming delays in dealing with other authorities or institutions – or, by acting as a deterrent, serving to modify the behaviour of supervised entities. Supervisory authorities should note that unless such threats are supported by actual instances of the application of such sanctions their credibility in the market will be diminished.

SECTION 1: LEGISLATIVE BACKGROUND FOR RISK-BASED SUPERVISION

Risk-based supervision (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. Indeed, IOPS members who have embarked upon risk-based reforms sometimes discovered that they lacked such powers and that the regulatory environment was not adequate - causing delays and time consuming legislative revisions.

For pension supervision to be effective– whether risk-based or not – the pension supervisory authority requires a certain set of powers, which need to be set out in primary law. The *IOPS Guidelines for Supervisory Enforcement and Sanctions* (IOPS 2009a) outline what these powers should be (depending on the nature of the pension system and the supervisory approach).

Supervisory powers necessary for effective pension supervision

- **Preventative Powers:** power to obtain additional data and information; power to conduct on-site visits; power to follow up on complaints.
- **Protective Powers:** power to issue formal orders to take or desist from particular actions; power to disqualify members of the managing Board; power to restrict business activities; withholding approval for new activities or acquisitions; power to impose conditions/ restrictions on or to revoke the operating licence; power to remove or report external service providers; power to freeze assets;
- **Punitive Powers**: power to impose administrative sanctions including fines; power to apply to a court for orders; power to refer matters for criminal prosecution.

A. Legislative Approach Required for Risk-based Supervision

The legislative environment specifically for RBS needs to allow for more flexibility in order for a risk-based approach to be applied. Two types of legislative flexibility are involved:

- The legislation governing pensions which is outside the supervisor's control (*i.e.* the regulatory environment)[4] should allow ***discretion in the interpretation of legislation***. This can be done by using general phrases or principles that can be interpreted by individual pension entities under the guidance of the supervisor. For instance, the Chilean supervisor is explicitly empowered to interpret legislation, while the United Kingdom supervisor can issue codes of practice interpreting specific phrases in law, such as 'reasonable period'. The law could require those running pension funds to have 'sufficient expertise', leaving it up to the supervisor to decide what this means from a risk-based perspective and enforce its definition as appropriate.

[4] This covers primary legislation passed by the national parliament and any secondary legislation that does not originate from the supervisor.

- The legislation governing the pension supervisor should allow ***discretion in the enforcement of legislation***, so that the pension supervisor is not obliged, either by explicit duties or compliance related objectives, to pursue all breaches of legislation, which makes a rules rather than risk-based orientation virtually unavoidable. This means that the legislation should give the supervisor adequate powers and flexibility to adopt risk-based policies. This can most simply be done if the legislation says that the pension supervisor *'may'* undertake a specific activity rather than it *'must'*. Better still, legislation, (or government commentary thereon), can mandate a risk-based approach, but this is neither essential nor universal for risk-based supervisors.

The legislative environment should provide the pension supervisory authority with such levels of discretion for a risk-based supervisory approach to be adopted (thought this does not mean that supervisory authorities can act in an arbitrary or inconsistent fashion).[5]

Prudential Regulation

As discussed in the Introduction to the IOPS Toolkit, moving towards RBS is often accompanied by the deregulation of strict rules and a move towards a more 'prudential' approach to regulation, applying more high level principles. [6] However, such prudential regulation should not be seen as a 'pre-requisite' for RBS, which can operate within both a rules-based or a more prudential regulatory environment. Such 'principles-based' regulation does requires a certain level of 'responsibility, mutuality and trust' between the regulator and regulated community to work. Hence, as discussed, the new RBS approach may need to be initially combined with more rules-based regulation.[7]

One form of such prudential regulation applied to pension funds' investments is the prudent person principle. A move towards risk-based supervision is often accompanied by a deregulation of quantitative investment rules. Indeed such deregulation may be the motivation for the adoption of a risk-based supervisory approach (as supervisors need to develop ways of assessing how much risk the pension fund is taking within its investment strategy, as opposed to simply checking whether quantitative regulations are being applied). Under the prudent person rule, quantitative limits on investment are partially or entirely replaced by purposive requirements such as 'sufficient diversification' with reference to how these would be interpreted by a 'prudent person' with appropriate expertise (see OECD 2006).[8] The application of the prudent person principle however does not exclude the implementation of investment limits imposed by the pension fund management.

[5] Module 5 of the IOPS Toolkit discusses ways to ensure consistency of supervisory response.

[6] According to Smith (2007), principles-based regulation means: *"moving away from reliance on detailed, prescriptive rules and relying more on high level principles to set the standards by which regulated firms must conduct business."*

[7] For a discussion of principles-based regulation see (Black 2008b), (Smith 2007)

[8] Another way of regulating investment with a risk-orientation is to set limits on the value at risk leaving pension funds discretion as to how they operate within the limits - see Module 2 of the IOPS Toolkit.

Examples of countries having integrated quantitative limits into a risk-based approach to supervision

Kenya

The Retirement Benefits Agency of Kenya still applies a broad range of investment guidelines to pension funds (including maximum limits in cash, government securities, in regionally listed shares, etc.). The rule that these maximum limits may be violated in cases of asset revaluation or appreciation for a period of no more than 90 days is also applied.

However, as the authority moves towards as risk-based approach to supervision it has built these limits into its overall risk assessment. The degree of diversification of a fund's investment portfolio and compliance with the investment guidelines count for 5% of the overall risk score - 2 marks are awarded if the scheme has complied with investment guidelines / 1 mark if invested in guaranteed funds (some penalisation to take account of credit risk in such an investment instrument) and 0 for non-compliance.

The Retirement Benefits Authority also considers investment income within its on-site inspection guidelines (*e.g.* recommending consideration of the volatility and distribution of income by asset class).

Australia

The assessment of investment risk by the Australian Prudential Regulation Authority (APRA) is fed into the PAIRS rating system (Probability and Impact Rating System) which determines the approach of the supervisory authority.

A fund receiving a 'very low' PAIRS rating on inherent balance sheet/investment risk will have well-diversified investments spread across different investment products and markets, and little exposure to volatility in returns. At the other end of the spectrum, a fund rated 'extreme risk' on this criterion will have a concentration of investments in one product or market, and high exposure to volatility. In between, a high-medium rating (1.6 to 2.0) is aligned with 'some concentration' of investments in certain products or markets, and 'significant exposure' to investment volatility. In order to derive this rating,

APRA does not apply quantitative restrictions.[1] Instead APRA's supervisory approach is to determine whether a fund has a clear investment strategy; to assess whether that strategy is consistent with the trustee obligations; to make a judgment on whether the trustees, with service providers where relevant, are competent to carry out that strategy; and to assess whether they are capable of monitoring the strategy's implementation and adapting it to changed circumstances for either the fund or for markets. In other words, the trustee has full responsibility for the investment allocation and APRA's approach is to examine the policy of the trustee.

[1] The only restrictions applied are on 'in house assets' (that is, investments in an employer-sponsor and related entities), the sole purpose test (investments must be for the purpose of delivering retirement income) and prohibitions on lending to members.

The interpretation of how to apply the prudent person rule in practice is left to the supervisor who may or must issue guidance expanding on how the purposive phrases should be interpreted in practice, according to perceived risks. For instance, some supervisors responded to concerns about alternative investment classes by issuing guidance and seeking additional information on the use of these investments - such as in the Netherlands where the prudent person principle is interpreted as requiring pension funds to only invest in derivatives when they contribute to reducing the overall risk profile of the pension fund. Moreover, the principle states that investments on non-regulated markets should be limited to a prudent level.[9]

The prudent person principle needs to be supported by legal provisions requiring the establishment of a rigorous investment management process to set investment objectives, monitor performance and select investment managers. In addition a higher degree of freedom of investment for pension funds based on the prudent person principle is compensated by proper risk management procedures/monitoring, international control and governance requirements and, where appropriate, risk-based solvency requirements.

However, it should be noted that - as outlined by the *OECD guidelines for Pension Fund Asset Management* (OECD 2006) - the use of the prudent person rule and the use of quantitative investment restrictions are not mutually exclusive. In fact, as experience from the 2008/2009 economic and financial crisis has proven, the application of quantitative limits in some countries has helped to mitigate the effects from loss in value. Indeed a risk-based supervisor will need to consider both as following quantitative rules alone may not be enough to ensure that a fund is being operated 'prudently' and that problems will not arise in future. Current compliance with regulatory requirements - although necessary - might not be sufficient to provide evidence that risks are being kept at or below a satisfactory level. This is particularly likely to be the case if the quantitative requirements address only some of the risks that are of interest to the supervisor, for example, credit and market risk but not insurance or operational risk.

Some countries which still rely heavily on quantitative limits have integrated these into a risk-based approach to supervision. The supervisory authority consequently monitors investment risk according to whether pension funds are invested within the quantitative limits set. Non-compliance will be added to the overall risk score within the risk assessment part of risk-based supervision process. Risk-based supervisors also consider not only whether quantitative regulatory requirements are being met, but also *how* this is being done - *i.e.* with reference to asset diversification, the overall investment strategy of the fund, risk-management systems in place, etc. - to establish not only if rules have been broken in the past, but whether problems are likely to occur. Stress tests may also be used to establish if quantitative limits are likely to be met even under adverse circumstances (see Module 2 of the IOPS Toolkit). Alternatively, some risk-based supervisors do not apply quantitative limits and focus solely on the application of the prudent person rule.

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[9] The Dutch interpretation of the prudent person rule is in this respect in line with the European Directive (Directive 2003/41/EC), which has the following practical consequences: the assets of a pension fund must be_predominantly invested on regulated markets - *i.e.* alternative investments which trade on unregulated markets must be kept to prudent levels); (alternative) investments should be properly diversified, so that concentration risk on the portfolio level is limited; investments in derivative instruments are only allowed when they <u>contribute to a reduction of investment risks</u> or facilitate efficient portfolio management (*i.e.* not for leveraging or speculation); The use of derivatives for the purpose of increasing leverage or speculation is not permitted; derivatives must be valued on a prudent basis, taking into account the underlying asset. The pension fund shall also <u>avoid excessive risk exposure to a single counterparty</u> and to other derivative operations.

B. Legislative Support for Risk-based Supervision

In addition to a generally supportive legislative environment, the following specific legislation should be in place for a supervisory authority to adopt a risk-based approach.

Supervisory Objectives

The core of any risk-based supervisory system is that it should start with risks. The legal framework needs to set out clear supervisory objectives for the pension supervisory authority, which should enable the pension supervisor to determine which risks require most focus and the outcomes it should be seeking to achieve through addressing the risks. Hence, the supervisory authority's objectives should be phrased in terms of outcomes (for instance protecting the interests of the members and beneficiaries of pension plans and funds).[10]

Risk-based Supervisory Powers

Under a risk-based approach to supervision, enhanced powers may be required to increase the pension supervisory authority's weight and standing. A risk-based supervisory approach will change the relationship between the authority and supervised entities, and the supervisor will need to have suitable credibility and weight to force supervised entities to act.

There may need to be changes to the constitution and ***independence of the supervisory authority*** - for instance to make it clear that the supervisor is not unduly swayed by external pressures, to place governance in the hands of individuals credible to the industry and to enable the authority to recruit staff of sufficient caliber. In many cases the move to risk-based supervision has been accompanied by substantial changes for these purposes.[11]

Given a key part of risk-based supervision involves placing more responsibility for risk oversight with the pension funds themselves, supervisors need to be confident that these managers are up to the task. The pension supervisory authority may need to execute a ***fit and proper test*** on the members of the governing board of pension funds, and have the authority to disqualify members on the basis of this test. Legislation needs to allow the pension supervisory authority to take on this role.

In terms of the powers needed by a risk-based supervisor itself, the more interpretive nature of the regulatory environment necessitates a ***power for the supervisor to issue binding or persuasive guidance***.[12] This can be provided through license conditions, secondary regulations or codes of practice. Advisory

[10] The objectives of pension supervisory authorities are discussed further in Section 2 of this Module. How risk should be assessed in relation to the supervisory objectives is covered in Module 3 of the Toolkit.

[11] For further discussion of the independence of the pension supervisory authority see IOPS Working Paper No. 10 (IOPS 2009c)

[12] Persuasive guidance might involve a code of practice which, while not having the force of law, must be taken into account in any judicial process, or guidance on the factors that the supervisor will take into account in its actions, for instance, the content of license applications or the design features of internal models for funding solvency.

guidance and education may be needed to improve the ability of pension entities to manage risk effectively.[13]

RBS is very demanding on information. Risk-based supervisors can only supervise risks about which they have adequate information. Given the need to upgrade data collection and analysis it is essential that the law gives the supervisor ***the power to license or authorise industry participants***, to ensure that the supervisor is aware of every participant.[14] In some cases licensing or registration applies only to pension funds, whilst in others cases suppliers - such as third party administrators, investment managers, etc. - are also required to be registered. This will depend to some extent on the maturity of the market and the degree of supervision by other supervisory bodies of entities providing services to pension funds. The requirement to register might apply to all pension funds, or only to a subset.[15] Whatever the scope of licensing or registration is, the supervisory authority must ensure that unlicensed operatives (*i.e.* ones who should be licensed and are not otherwise exempt) are obliged to do so and the pension supervisory authority should vigorously enforce this requirement.

Moving to a risk-based approach to supervision requires the supervisory authority to make judgments on the level of risk posed by and on pension funds. In order to do so, they will likely require different information from the pension fund than under a rules-based approach (particularly on governance issues) - for example, information on the risk-management systems of the pension fund, its investment strategy information to help judge the ability of the management, etc. Supervisory authorities therefore need to check that the appropriate legislation grants them sufficient ***powers to collect information*** they require to make the necessary judgments. [16]

Given that pension funds are an increasingly important part of many financial systems, a comprehensive risk approach to pension supervision will involve pension supervisors sharing information and coordinating with other oversight bodies (*e.g.* those overseeing areas of market conduct, or - in a non-integrated supervisory environment - those overseeing other financial sectors which may play a role in the pension industry - *e.g.* insurance companies providing annuities). Pension supervisory authorities should therefore check that they have in place the necessary ***powers to share information*** and undertake such cooperation (such as the power to sign Memorandums of Understanding, or policies for sharing and protecting information and data), taking into account confidentiality requirements.

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[13] Further information on the type of guidance which the pension supervisory authority will need to provide is discussed in Section 2 of this Module.

[14] Pension supervisory authorities moving towards a risk-based approach may tighten licensing requirements – given more risk-management responsibility is placed with the supervised entities. However, this is not essential as it is within the pension supervisory authority's discretion to decide at what stage in the supervisory process risks are managed (*i.e.* at the start when entities are licensed, or afterwards when they are already operational, or indeed both). Issues such as the level of competition and market discipline which can be relied upon within the pension industry will also be deciding factors on how strict licensing criteria are. For details see (OECD/ IOPS 2008a+b).

[15] For example, in some case "executive" type pension funds, aimed at the senior executives of an organisation would be exempt. In some cases registration with the pension supervisory authority only applies to funds which obtain favourable tax treatment.

[16] Information required for RBS is discussed in Section II of this Module and in IOPS Working Paper No. 13 (IOPS 2010).

The pro-activity inherent in a risk-based approach, seeking to mitigate risks before problems occur, may require legislation to grant supervisory authorities new ***powers relating to intervention and enforcement,*** giving them the ability to adapt and to act quickly. The law should provide the pension supervisory authority with adaptable and graduated powers of enforcement.[17] In order to ensure the efficiency of supervision, pension supervisory authorities must be fully empowered to carry out their tasks. Supervisors should therefore have the power to take any measure necessary to ensure that entities comply with the regulatory requirements as well as to prevent and remedy any irregularities.

Under a risk-based approach to supervision, rather than simply needing the authority and enforcement power to compel a pension fund to comply with legislative requirements, the pension supervisory authority may need a broader and more adaptable set of tools to allow it to react to risks as they are detected. For instance, regulation may be needed to give the pension supervisory authority the power to impose fines or undertake other punitive actions itself.

Powers to investigate and enforce action in relation to outsourced activities are also necessary. As supervisory powers need to be applied in a timely and proportionate manner, pension supervisory authorities should be empowered to conduct on-site inspections at the premises of a pension fund (see Module 5 of the IOPS Toolkit).

Where funding of the supervisory authority is provided by the supervised entities, regulation may be required to grant the supervisory authority the power to charge a risk-based levy, which can be used to send appropriate signals to industry and embed a risk-based approach (as the better the risk-management of a fund, the lower the supervisory levy applied).[18]

C. Risk-based Legislation[19]

Regulation which is itself risk-based can provide a supportive environment for risk-based supervision to be enacted. However, such risk-based regulation should not be seen as a necessary requirement, as a risk-based supervisory approach can still operate alongside more standard quantitative rules and regulations (which can in themselves be made more 'risk-based' by applying stress tests – see Module 2 of the IOPS Toolkit for further discussion).

With pension funds, risk-based legislation would primarily take the form of risk-based solvency rules or - in the case of Defined Contribution (DC) funds - quantitative stress tests on account balances. Indeed for some supervisors (*e.g.* De Nederlandsche Bank in the Netherlands or the Office of the Superintendent of Financial Institutions[20] in Canada for Defined Benefit (DB) funds, and Comisión Nacional del Sistema de

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[17] See (IOPS 2009a) and Module 5 of the IOPS Toolkit.

[18] However, charging higher levies would in effect disclose the risk-rating of the fund, which is an issue which needs to be handled with care – as discussed in Module 5 of the IOPS Toolkit.

[19] In the Toolkit, risk-based regulation refers to regulatory requirements which change in relation to level of identified risk (*e.g.* VaR models, risk-based solvency in Basel II and Solvency II regulation). Regulations designed to control risks (such as the risk-management and governance requirements in Basel II and Solvency II) are regulations relating to risks, but the regulation itself is not considered risk-based per se.

[20] The Office of the Superintendent of Financial Institutions -which supervises federally registered funds - projects solvency ratios on a six-monthly basis and follows up with funds which show an increase in solvency risk. Canada is

Ahorro para el Retiro in Mexico applying the Value at Risk model to DC pensions)[21] the risk-based supervision of solvency is central to their risk orientation.

As described in Module 2 of the IOPS Toolkit, risk-based solvency requirements can take several forms, including factor-based or stress-related. In essence, pension funds have to show that their funding level is sufficient to cover specified risk scenarios, or, in the case of DC funds, that the account balance will not be unduly impacted under specified market conditions. However, there is debate as to how appropriate such short-term, risk-based tests are for long-term pension savings, and such methods are currently not universally applied.[22]

perhaps unique in having pension regulation primarily at a provincial level. The federal regulator does have a role to play for pension funds of enterprises coming under federal jurisdiction and there is a coordinating body, the Canadian Association of Pension Supervisory Authorities, which also plays a role, somewhat similar to the National Association of Insurance Commissioners in the United States in regard to state supervision of insurance companies.

[21] See Module 2 of the IOPS Toolkit for definitions.

[22] Further discussion can be found in Module 2 of the IOPS Toolkit.

Table 1: Risk-based solvency requirements

Country	Measurement of Liabilities (Technical Provisions)		Minimum Solvency Requirements	Solvency Buffers
	Treatment of Longevity Risk	Discount Factors		
Netherlands	Group specific mortality table adjusted for predicted longevity improvements, plus buffer to address uncertainty in predicted values.	Market yield curve measured by Euro swap curve.	5% of Technical Provisions (from EU IORP Directive). Measured once per year using current market values. Maximum period for correction of deviations: 3 years.	Maximum probability of underfunding within 1 year measured with stress test: 2.5%. Solvency buffers determined by risk factors specific to each asset class. Example of risk factors include yearly decline in: equity 25-35% (depends on type); currency 20%; real estate 15%. Maximum period for correction of deviations: 15 years.
Denmark	Fund-specific mortality table approved by actuary and supervisor. Traffic light stress test includes assessment of the impact of a 5% improvement in longevity.	Market yield curve measured by Euro swap curve.	Solvency margin defined by EU Life Directive: 4% of Technical Provisions plus 0.3% of risk bearing investments. Measured every 6 months using current market values. Period of correction from minimum required standards: 1 year.	Traffic light system is a stress test rather than part of the formal solvency rule, but results are taken into consideration in the supervisory assessment. Test defines 3 zones: green, yellow, and red. Final outcome depends on whether entity remains solvent after test. Example (year variations): listed equity: red 12%, yellow 30%; interest rate (medium duration): red +/- 0.85%, yellow +/- 1.2%
Mexico	No formal liabilities in DC plans.		No formal solvency requirements, but VaR limit designed to limit downside risk for DC members. Historic VaR calculated with rolling 1000 day sample at 5% significant with different limits imposed on the 5 portfolios (from 0.6% to 2%). Price vector provided by 2 independent vendors.	

Source: (Brunner et al 2008).

SECTION 2: SUPERVISORY READINESS

In practice, risk-based supervision (RBS) cannot be achieved by decree alone. Surveys of authorities that have introduced risk-based systems report that, even with commitment and good planning, it can take several years for inspectors and supervisors to fully embrace and adapt to the new approach.[23] It can take considerably longer if members of senior management do not "buy-in" to RBS, or see RBS as an "optional extra" to their current activities.

Though all the pension supervisory authorities that have adopted this approach believe it is worth doing, they found that introducing RBS impacts on the internal structure of the pension supervisory authority as well as on management/leadership demands. It requires significant commitment, planning, resources and goodwill of the authority's staff, the pension industry and other stakeholders. Each country's pension environment (*i.e.* the diversity of its laws, regulatory architecture, number and types of funds, stage of economic development, and so on) is unique to some extent. Consequently, each pension supervisory authority needs to evaluate these issues in its own context and not all outcomes will be the same. In this sense RBS and its implementation are still much more art than science. The discussion below focuses on elements that are reasonably common to most authorities/countries.

Suggested good practices for adopting risk-based supervision

The IOPS Working Paper No.4 (IOPS 2007b) provides the following suggestions, applicable to all pension supervisory authorities making the move towards a risk-based approach:

- Allow plenty of lead time and do not underestimate the amount of change required by the authority;
- Start to move to a risk-based approach whilst the supervisory authority has capacity, and before pension industry growth accelerates;
- Build any new administrative structures gradually and allow flexibility/time to adapt;
- Begin to build new risk-based methodology into existing operations;
- If possible, introduce risk-based supervision at the same time as other pension reforms, and make sure other legislation is in line;
- Consider the following structures:[1]
  - cross-sectoral evaluation;
  - separate departments analysing and leading interventions on different risk categories.

[1] See following section in Module 1 of the IOPS Toolkit on organisational structure

As stated, no pension supervisory authority can wait until the perfect conditions are in place before proceeding towards RBS. Indeed, as discussed, elements of both a rules-based and a risk-based approach will be appropriate for most jurisdictions which pension supervisory authorities oversee. Supervisors should be encouraged to move in the right direction and in many cases if they take the right steps, the conditions will come into being, tentatively at first, more surely as progress is made - small steps in the right direction should hopefully forestall the problems that a great leap forward almost always entails. It is

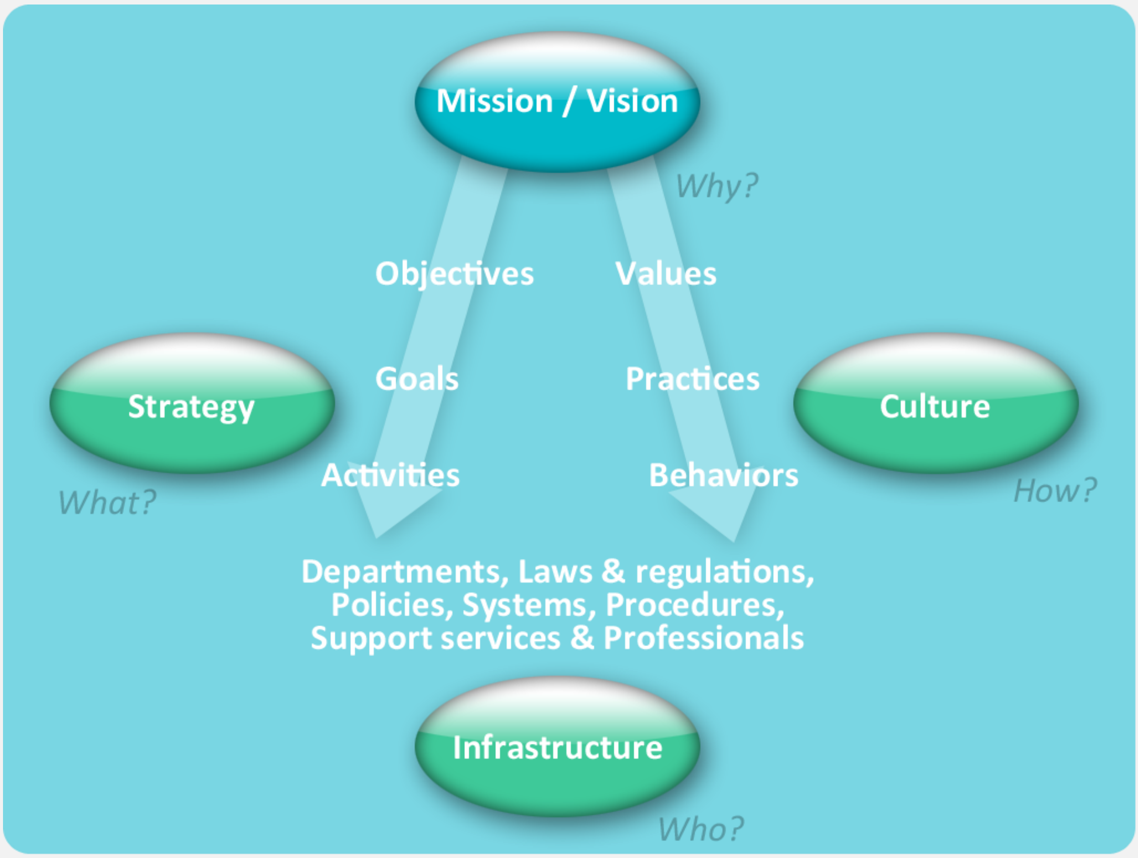
[23] See (Black 2008a), p.34.

important to move steadily from the current procedures used by the authority to a more risk-based approach, retaining the positives of the current procedures, while allowing scare resources to be applied in a more efficient and forward-looking fashion.

A. Organisational Alignment and Strategic Planning

Organisational alignment is the systematic alignment and co-ordination of strategy, culture, and infrastructure to ensure collaboration and effective contribution to the authority's mission.

Figure 1: Pension Supervisory Authority (PSA) organisational alignment



Source: authors (Promontory Financial group)

In Figure 1:

- *Pension Supervisory Authority's Mission and Vision:* establish the core purpose for the existence of the authority (the 'why'). The Mission may be legislated (explicitly or implicitly), with the Vision steering the longer-term aspirations for the pension supervisory authority and pensions industry.

- *Pension Supervisory Authority's Strategy:* defines the intent and scope of activities to be undertaken in pursuit of objectives and goals (the 'what'). In the context of the Mission and Vision, strategy sets what will done, the priorities, and the timetable.

- *Pension Supervisory Authority's Culture*: determines how the authority will conduct its activities by establishing its values, principles, and belief systems (the 'how'). The authority's culture drives how individuals in the authority treat one another, industry participants and other stakeholders, and how they conduct the day-to-day business of pension industry oversight.

- *Pension Supervisory Authority's Infrastructure:* is the pension supervisory authority's staff, organisation structure (of work units/departments), laws and regulations, policies, systems, procedures, and processes, as well as supporting services and professionals (in broad terms, the 'who').

Leadership is critical. By conducting a strategic review of the organisational alignment with RBS as the guiding theme, the Board/senior management demonstrate commitment to the RBS process, set the tone at the top, and provide a strong platform for cultural change. Each element of organisational alignment requires honest assessment.[24] Many supervisory authorities, for example, suffer from cultural inertia. Embedding cultural change needs strong leadership, good communication, and training.

Unlike corporations, most supervisors take their cue on their Mission from legislation. Indeed, IOPS Revised Principles of Private Pension Supervision, Core Principle 1 (IOPS 2010a) requires that "*national laws should assign clear and explicit objectives to pension supervisory authorities*".

Typical supervisory objectives[1]

- Safeguard the interests of members and beneficiaries
- Promote trust and confidence in financial sector
- Maintain orderly and stable financial markets
- Facilitate competitive financial markets
- Promote sound business practices
- Protect against excessive loss
- Ensure fair treatment
- Take prompt corrective action

[1] As highlighted in '*Implementing Risk-based Supervision: Leadership and Management Challenges'*, (presentation given by Michael Hafeman, Regional Insurance Leadership Program, April 19-24, 2009, Johannesburg, South Africa).

The topic of how risks should be assessed against supervisory objectives is covered in Module 3 of the IOPS Toolkit.

[24] Various analytic techniques can be used for this assessment, such as SWOT analysis (Strengths, Weaknesses, Opportunities, and Threats), PEST analysis (Political, Economic, Social, and Technological analysis), STEER analysis (involving Socio-cultural, Technological, Economic, Ecological, and Regulatory factors), and EPISTELS (Environment, Political, Information, Social, Technological, Economic, Legal and Spiritual)

Notwithstanding the IOPS Revised Principles of Private Pension Supervision, some countries have yet to amend their national laws to reflect IOPS best practices. Where the legislation is not particularly helpful, the pension supervisory authority can shape its own Mission and Vision Statements to provide the guidance needed for setting the risk focus and moving to RBS.

For example, in Australia, the legislation establishing the Australian Prudential Regulation Authority (APRA) is relatively vague in stating: "*APRA is established for the purpose of regulating bodies in the financial sector in accordance with other laws of the Commonwealth that provide for prudential regulation or for retirement income standards …*"[25] Nor, for that matter, are the other laws of the Commonwealth particularly helpful. APRA's Mission Statement, however, is clearer in terms of supervisory objectives. It states that APRA's mission is to: "*establish and enforce prudential standards and practices designed to ensure that, under all reasonable circumstances, financial promises made by institutions we supervise are met within a stable, efficient and competitive financial system.*"[26] In implementing RBS for pension plans and funds APRA has interpreted this last clause as requiring it to minimise the probability of, and damage to fund members and beneficiaries caused by, fund failure.

More generally, a Vision Statement should state aspirational goals for the organisation (expectations for the next five years or more) that help set the cultural tone and values, as well as influencing the intended evolution of the pension supervisory authority over time.

"Values Statements" can help set the tone for the success of change management to RBS. Values need to be given careful consideration. Once settled they should be embedded in all aspects of the way the pension supervisory authority does business. Objectives and values should be reflected in job descriptions, performance management, and bonus schemes (if applicable), and are an important aspect of embedding new cultures.

The core values and what these mean to the pension supervisory authority in practice are likely to be a matter for extensive debate within each authority. This debate is nonetheless critical, as is identification of current weaknesses that may inhibit attainment of the authority's objectives, followed by adoption of values that address those weaknesses. For example, if an authority has a tradition of operating in "silos", where information and experience sharing is poor, then a commitment to, and recognition and reward for, the core value of "collaboration" or "teamwork" would be appropriate. Similarly, if judgment and decision making has been highly centralised, then "initiative" may be adopted as an appropriate core value before moving to RBS.

B. Supervisory Skills and Culture

RBS requires a new set of skills and culture at the pension supervisory authority. The implementation of risk-based supervision has significant resource implications, both during the start-up phase and on an ongoing basis. Supervisory skill sets must include industry knowledge, understanding of risks and risk management techniques, analytical abilities, familiarity with the risk-focused methodology, judgment and communication skills. In addition expertise is required in each main risk category (credit risk, actuarial risk,

[25] Australian Prudential Regulation Authority Act 1998, s.8.

[26] See inside cover of any APRA Annual Report (APRA 2001).

governance risk, and so on)[27] as well as expertise in the application of RBS itself. In order to achieve these skill sets, the supervisory authority will need to conduct significant training and may need to recruit new staff and retain outside experts on a contract basis (who would be bound by the same confidentiality agreement as staff and should avoid any conflicts of interest).

Almost every financial supervisory authority that has moved to RBS has experienced some resistance to the need for cultural change among their supervisors. As described, under RBS, supervisors are required to make judgements and to back those judgements in recommending supervisory actions - a change in mindset which does not sit easily with all staff. However, introducing RBS can be seen as an opportunity to raise supervisory skills, which has been appreciated by the authorities which have undertaken the move.

While the absence of the requisite skills and culture need not rule out a shift to RBS, they should play a central role in preparing for and migrating to the new RBS framework. It is difficult to overstate the importance of training, cultural assessment and development, and strong leadership (as distinct from management) during the change period. The greater the skill and culture gaps the longer should be the transition period to the new framework.

Suggestions for staff reorganisation for the implementation of risk-based supervision

IOPS Working Paper No.4 (IOPS 2007b) makes the following suggestions when it comes to training and organising staff in preparation for a risk-based approach:

- Make sure training is provided for *all* staff - covering the philosophy of risk-based supervision as well as the process;
- Rearrange existing staff where possible to minimise costs;
- Use international expertise/ask for international training assistance;
- Hire or second experts from 'risk-aware' sectors in the pension supervisory authority or the private sector;
- Use 'lead-teams' to drive the reform process;
- Leverage internal expertise for training where possible;
- Make training on-going so staff understand how the approach and models are adapting, how they are fitting with industry developments, etc.;
- Leave plenty of lead time and flexibility and do not neglect basic management during reform process;
- Provide training for trustees, fiduciaries or other key stakeholders.

Unfortunately there are currently few comprehensive training programs for pension supervisory authorities to develop the skills needed to be high-quality risk-based supervisors, and so pension supervisory authorities moving to RBS are forced to rely on others who have gone through the process before them. Not surprisingly, there is a high demand by emerging market pension supervisory authorities to place staff on secondment with developed country authorities that have experience with RBS. External

[27] In Module 3 of the IOPS Toolkit a list of possible risk factors to include in a risk assessment is designed as a check to help supervisors devising their models.

help could also be provided by external professionals (*e.g.* consultants). Such external experts and international experience can be useful in providing guidance and frameworks for authorities moving towards RBS, but it is important that the approach is fitted to individual country and pension system circumstances. There needs to be true involvement, commitment and buy in from all levels of the authority to ensure that the new process is truly embedded.

C. The Number and Mix of Staff Resources

Number of staff

Unless the supervisory authority increases its budget and staff significantly, the resources required for the RBS start-up process are resources unavailable for ongoing supervisory tasks. During the initial period of risk-based supervision, the actual supervisory burden will be particularly high. In part, this is due to the natural inefficiency of staff as they learn the new approach and become comfortable with it, which can be minimised with adequate training and attention to managing the human aspects of the change. However, the process of developing assessments for the supervised universe as a whole, and indeed in some countries an individual assessment of each entity overseen, is also time-consuming and resource-intensive (except for small entities with simple operations, *e.g.* a single line of business, it may take several years to complete the assessment of the net risk of each significant activity of all the entities in the supervisory universe). Once an initial comprehensive risk assessment has been completed, the supervisor can use this information to target its future supervisory activities and, perhaps, reduce the total annual supervisory resource requirement.

There is no unambiguous case that, after the initial set up phase, RBS necessarily requires either more or less staff resources than a more traditional, rules-based approach. What can be said is that good supervision inevitably requires more resources than are usually available. Thus, any move to RBS that is motivated by cost cutting is probably doomed to failure. What RBS does is allow the supervisory authority to use its resources more efficiently. What is unquestionable is that the nature of staffing resources is different under RBS. While training is essential, there is also no substitute for experience. An experienced supervisor understands industry issues and develops a "feel" for when the information provided by a fund is at variance from the underlying reality (as a consequence experienced staff will typically be more expensive than those merely checking for compliance in a more mechanistic fashion). RBS provides experienced supervisors with the opportunity to express their reservations in a structured way.

While this aspect of RBS does not necessarily carry organisational implications, it is worthwhile for the senior management of an authority moving to RBS to spend time thinking through how best to deploy their experienced resources so as to provide a balance across the industry and also to provide mentoring for junior, less experienced staff.

Resource planning can be more challenging under a risk-based supervisory approach. The tasks and resources required to conduct an on-site inspection designed to assess compliance with legal requirements can be estimated in advance with reasonable certainty. While this may also seem possible when planning a risk-based inspection, the pension plans or funds may require significant adjustment depending on the initial findings of the inspection. The supervisor must have a flexible resource planning process to respond to such situations. Ideally, this flexibility should include the ability to exceed the annual budget and retain external experts, as necessary, to address serious supervisory concerns. For example, an inspection may raise some concerns about the manner in which an entity is managing credit risk. In order to validate these concerns and provide sufficient evidence for taking supervisory action, it may be necessary to expand the scope of the inspection.

Organisational Structure

As noted, RBS requires the authority to develop or acquire specialist skills, it is usual to keep these experts separated from, but available to support, the supervisors who actually implement the RBS system. Thus, most authorities that have adopted RBS have established a separate unit of experts, either within a policy unit or as a separate group.

Likewise, RBS often involves building a risk-scoring model for individual entities supervised. It could also be considered good practice for the team developing and maintaining the model to be separate from the supervisors using the model to generate risk-scores, in order that they are not able to manipulate the model to deliver the results they would like to see.

Module 4 of the IOPS Toolkit discusses whether responsibility for overall risk assessments should lie with the individual supervisors or central management teams. In some authorities the supervisor in charge of the oversight of a particular entity is responsible for the risk-score applied to the entity (though central guidance or recommendations are usually available). In other authorities, the risk-score is set centrally (according to pre-populated risk scores) with individual supervisors having to justify any changes which they make. A balance between individual judgement and consistency across entities needs to be struck. The more individual judgement, the more systems of checks will have to be introduced. The balance between the two approaches is further discussed in Module 4 of the IOPS Toolkit.

In terms of overall organisation, a pension supervisory authority could adopt a "horizontal" (portfolio), "vertical" (functional) or "matrix" (hybrid) approach.

In the horizontal or portfolio approach, each analyst or team of analysts is given a portfolio of pension funds, which become his or her responsibility. The analyst would be expected to correspond with the pension fund to obtain data, ensure data submission is timely, chase up any recalcitrant filers, do the initial risk assessment and perhaps participate in the on-site inspection. The analyst would also try to seek or suggest remedies for high risk behaviour and encourage the fund to bring down the risk level for high risk funds. Each analyst might have a broad range of funds (defined benefit, defined contribution, single-employer, multi-employer, public sector, private sector) or might specialise in one or more types. New funds would be allocated to various analysts, who would guide the fund through the licensing or registration process. Similarly, if a fund were to convert from one type to another or to terminate altogether, the analyst would guide the fund through the process (and perhaps hand it on, if there is specialisation by fund type, in the case of fund conversion).

The vertical or functional approach is one where analysts or a group of analysts specialise in one function, such as the licensing or registration of new funds, data gathering and statistical analysis for existing funds, dealing with problem cases, conversions and terminations, etc. Other groups might specialise in specific risk areas. A separate group would be involved in off-site analysis and another would undertake on-site inspections. Each functional group would take care of its particular specialty for all funds registered or to be registered with the pension supervisory authority.

The hybrid or matrix approach could be a mix of these two, where there is a portfolio approach, but there are specialists in particular areas (for example conversions from defined benefit to defined contribution, or acquisitions and mergers).

The strength of the portfolio approach is that analysts get to see the full picture of the entities for which they are responsible, potentially from "birth to death" (although in most cases, it will simply be on-going year to year analysis) and so would be more aware of possible issues than an analyst who only sees one aspect of each entity. The possible downside is that analysts get too close to the entities which they cover and lose objectivity, though one way to avoid this is to rotate supervisors regularly - as is done at De Nederlandsche Bank in the Netherlands, for example. It could also be difficult to ensure consistent ratings across different analysts - some degree of "peer review" and a rating and scoring committee could mitigate this, although a proliferation of "committees" would not be a good idea. In any event, certain functions, such as research and analysis, legal services, data processing, etc. would need to be performed by specialists and could not form part of the "portfolio" approach. This is similarly the case with senior management, strategy and liaison with the government.

The functional approach, of course, has more or less the opposite attributes, while a greater degree of consistency can be maintained by having one group doing a specific task (for example checking on "fit and proper" tests for licensing or initial registration, on-going risk scoring), there is a loss of familiarity with individual pension funds that the portfolio approach fosters.

Most pension supervisory authorities would probably adopt a hybrid approach, especially as some functions are not conducive to the portfolio approach in any event. However, there are probably those that are closer to the portfolio end of the spectrum and vice versa. The division between off-site and on-site supervisors is one distinction along this spectrum. A complete separation would mean that off-site supervisors conduct a risk assessment which is passed on the on-site supervisor who then supplements this report by the on-site inspection, with the final report going to senior management (and the fund management in question). In some cases individual supervisors do both on and off-site work as part of their overall responsibilities or the supervisors work as a team (where the on-site supervisor might be a specialist and the off-site supervisor might attend some or all of the on-site inspection). A complete separation of functions can lead to a breakdown of communications and to the off-site and on-site supervisor working to different risk based standards, which is extremely inefficient.

Suggestions for the organisation of the supervisory authority

No one organisational structure is uniquely suited to RBS. However, whatever the organisational structure is, certain fundamental principles can be applied to the supervisory organisation:

- it needs to be transparent and accountable to the stakeholders (this includes government, pension fund members and beneficiaries, pension fund sponsors and others who supply services to the pension system);
- it needs to be independent and free from political interference;
- it needs to be able to act swiftly to protect the rights and interests of pension fund members and beneficiaries, but should not act arbitrarily;
- it needs to be able to defend its actions (in Court if need be – this is a distinct possibility, especially if extreme actions, such as when an involuntary termination is ordered, are taken).

D. Information Collection and Processing

Information for RBS

Having the right information is essential for risk-based supervision. It enables decisions to be taken as to which risks need the supervisor's attention, both at a macro and an entity-specific level, as well as enabling specific interventions to be planned and implemented. It therefore drives the RBS processes.

The IOPS working paper on the introduction of risk-based supervision (IOPS 2007b) concluded that probably the biggest - unexpected - challenge encountered by the pension supervisory authorities when moving to a risk-based approach to supervision in the pension area was data collection. This proved to be a particular challenge not only in countries with developing pension industries, where data is often not available, but also in highly developed pension systems, where the large number of pension funds is the major challenge. Consequently, the paper recommends that pension supervisory authorities give data collection a proper place in the RBS planning process, examining the data they have and the data they need in advance of launching the transition to a risk-based approach - it is no use building perfect (theoretical) systems if there is nothing to put in them and nothing to analyse. One tip highlighted in the IOPS paper is to roll out any new data collection process in stages, starting with the larger pension funds first, or using slim-line reporting for smaller funds.

RBS changes the nature of information to be gathered. Information is needed not just on what is going wrong but what is going ***right***, so that effort can be targeted at the former (including planning visit schedules and deciding which funds to investigate in greater detail).

Supervisors need to build a more 'holistic' picture of the industry and entities they are supervising, which entails not necessarily looking at different information, but using it in different ways. Supervisory authorities should also consider combining existing data points to give new insights. Supervisors require ***qualitative*** information on ***how*** entities are complying with rules as well as just quantitative information showing that they are doing so.

Rather than just point in time data (*i.e.* is a fund comply with an existing rule at the moment), supervisors require ***trend data*** to try and spot developing problems (meaning that the data used must be consistent over time).

Data can also be used as ***early warning triggers*** or ***stress tests***[28] can be introduced, again to try and detect problems before they develop. For example, having moved to a risk-based approach, the supervisor in Mexico - Comisión Nacional del Sistema de Ahorro para el Retiro - uses a summary of transaction data submitted daily by pension funds not only to check compliance with investment regulations but also as an early warning of potential breaches of their risk-based 'value at risk' measure for fund performance.

Information is needed both on the ***probability*** of risks materialising and their ***impact*** should they materialise (see Module 4 of the IOPS Toolkit for further details).

[28] See Module 2 of the IOPS Toolkit for definitions and further discussion

The supervisor also needs more information on the big picture so as to identify how ***systemic risks*** can affect individual entities and the pension industry as a whole (see Module 3 of the IOPS Toolkit for further details).

Obtaining information from ***other sources*** than the supervised entity may become more useful, and exchanging information with other supervisory authorities (whilst observing necessary confidentiality requirements) may also become more important.

In addition, assessing the ***performance of the pension supervisory authority*** itself becomes more important under risk-based supervision. It is simple to measure a supervisor's effectiveness if compliance with rules is the major test. However, this is a more complex task under risk-based supervision as 'counter-factuals' are being measured (*i.e.* that certain events have not happened, and problems have been averted because of the supervisory authority's actions). Showing that risk-based supervision is working is important to gain acceptance for the approach from industry, those with political oversight and the public at large (who need to feel well protected). Likewise it is important for the authority itself in order to be sure that its resources are directed efficiently and effectively. The authority may need to collect information specifically for this purpose (*e.g.* through surveys).[29]

Table 2: Information needed for RBS

Information on what is going ***right*** as well as wrong
Qualitative information on how entities are complying with rules as well as just quantitative information showing that they are doing so
Probability of risks
Impact of negative events
'Big picture' information on ***systemic*** issues
Trend as well a point in time information
Early warning triggers (not always used)
Stress tests (not always used)
Information from ***other sources*** than the supervised entity
Performance measures for the supervisory authority
Do not need detailed information on every minor compliance failure

On the other hand - depending on the pension and supervisory systems in place - the supervisor may ***not*** need to hold as much detailed information about the activities of individual plans or funds nor about minor

[29] Performance measurement is discussed in more detail in IOPS Working Paper No. 10 (IOPS 2009c).

compliance failures. In some cases introducing risk-based supervision will mean that the amount of information gathered will increase, but in others - where often large quantities of unprocessable and unprocessed data are currently being collected - the amount might actually reduce. The introduction of RBS gives the authority an opportunity to critically scrutinise information gathering and indeed risk-based supervisors should regularly review their information needs to identify gaps or information that is redundant.[30]

Table 3: Illustrative hierarchy of information sources

Type of source	*Examples*	*Costs for Supervisor*	*Burden on supervised entities*
Existing datasets and documents produced for non-supervisory purposes	Plan or fund annual accounts; plan or fund governance documents; sponsor credit ratings; industry-wide surveys.	May need to be translated into a common format or checked for reliability.	Low as already in existence.
Mandatory exception reports	Whistle-blowing reports; reports of plan or fund deficits; recovery plans.	May need to specify a common format or reporting route and extract key data.	Depends on the requirement, but unavoidable and can be mitigated only if the supervisor moderates the requirement
Information from on-site evaluations or inspections	Checklists completed in advance of or during the evaluation; results of evaluations; reports to the entity	Small addition to cost of an already planned evaluation, but evaluations undertaken just to obtain information would be very costly	As for Supervisor
Work commissioned from third parties	Questionnaires/surveys; reports on specific entity issues	Significant cash cost, as well as cost of analysing the data when received	Limited to providing information to the third party
Returns from entities to the supervisor	Periodic plan or fund reporting forms or returns, regulatory accounts	Considerable costs in designing the return, following up non-returns, checking for reliability and analysing results	Considerable effort in finding the right information and putting it into the right format

Information Sources

"Risk-based" means that the pension supervisory authority will need to be able to justify why data points are being collected. Stakeholders react very negatively to excessive demands for data when they are

[30] Working Paper No. 13 on 'Efficient Information Collection' (IOPS 2010b) discusses how the type, amount and frequency of data collected will depend on the nature of the pension system.

aware that much of it is never even looked at, let alone used, for risk-based purposes. Supervisors should therefore focus on obtaining the minimum amount of high quality information necessary to inform risk-based processes. This necessitates risk-based decisions as to which data to collect, and how, and what analyses to undertake.

Supervisors may therefore wish to map out the types of information they require against the different sources of data available to them, and to consider these requirements against a hierarchy of potential sources, devised so as to minimise the cost to the supervisor and supervised entities. In this way, supervisors can seek to make the most efficient use of their resources while minimising supervisory burdens. Further detail is provided in IOPS Working Paper No.13 (IOPS 2010b).

Organisation of Information Collection

Moving to risk-based supervision does not require the indiscriminate gathering of every conceivable piece of data about the supervised sector. Raw data can be of limited value unless it has been processed and analysed so as to turn it into useful information. There is a substantial cost to the supervisor in obtaining data and converting it into a useful format which can be readily accessed. The most obvious cost is that of developing and implementing associated information technology and other on-line data collection systems which can run over a million euros (see box).[31]

Country examples for the cost of data collection systems

In the **United Kingdom** the project to design, build and implement the on-line pension scheme return took some 12 months and was budgeted at €1.1 million.

In **Australia**, the D2A system used for reporting by all of the Australian Prudential Regulation Authority's (APRA) regulated entities (not just by pension funds) during 2001-2003 was estimated at the time to cost approximately €0.8 million. APRA's 'back of the envelope' estimate for the current cost of designing and implementing a new collection system, including forms design and management, returns management, levy collections, data warehouse and project management, in today's money is at least €2.8 million for the pensions component of the framework.

On the other hand, the major electronic system used for collecting returns from the trustees of mandatory provident fund schemes in **Hong Kong, China** uses an email system running on a secured private network, known as the TrusNet. The implementation costs of the TrusNet were not significant.

Ongoing costs too can be substantial – the **United States** supervisor estimates that the time taken completing its annual return, for supervised entities and the supervisor, totalled 1.56 million hours.

In addition, there are operating costs associated with the need to check the data obtained for reliability and of analysing the data promptly so that any serious matters for concern can be acted upon quickly. Too much information can potentially swamp a supervisor and result in valuable intelligence being lost amongst the unimportant. There are also costs to the supervised entities in supplying data and

[31] IOPS Working Paper No. 4 (IOPS 2007b) suggests using electronic data collection where possible. Working Paper No. 3 (IOPS 2007a) discusses the use of Information Technology in more detail.

unwarranted demands by the supervisor - especially where little value is derived from the data obtained which can potentially damage the supervisor's reputation and relations with supervised entities. The supervisory authority should decide what information needs to be collected and stored on a routine basis and what can be collected when the need arises.

Thus, while some preparatory groundwork on information and Information Technology needs is essential, it is also critical for the authority to recognise that the shift to RBS is evolutionary and that the information and system needs are likely to evolve significantly with experience over the early years of implementation.

More critical preparations for moving to RBS are: recognition by the pension supervisory authority of the information challenges it will face; adequate budget for upgrading IT systems as needed; and acceptance by the industry of the changing information burdens it will face.[32]

Suggestions for data collection

IOPS Working Paper No. 4 (IOPS 2007b) makes the following suggestions to supervisory authorities moving towards a risk-based approach relating to data collection:

- Make sure data collection is given proper place in the planning process when devising a risk-based supervisory approach;
- Use existing data where possible to minimise costs;
- Make sure have powers (legal requirements) to obtain data from pension funds (but consider persuasion, incorporating into risk-based analysis, etc. rather than fines and sanctions);
- Consider rolling out the data collection process in stages (*e.g.* starting with larger pension funds first);
- Consider slim-line reporting requirements for small funds;
- Make data submissions electronic where possible;
- Explain clearly to all involved parties why the data is requested and to what use it will be put.

Some authorities have found it helpful to separate the data collection and assessment functions with the processing group being solely responsible for collecting objective data from industry, collecting subjective assessments from supervisors, and producing the initial 'report cards'. Again, the optimal management of objective and subjective data is a matter for each pension supervisory authority to determine.

The sourcing and management of information can be improved if each source and purpose has an owner within the authority. It would be their responsibility to make the case for all the information required and

[32] Ironically, entities complain more about changes in information demands by supervisors than they do about the volume of supervisory information *per se*. This is because the cost of changing IT systems is high compared with the cost of ongoing delivery.

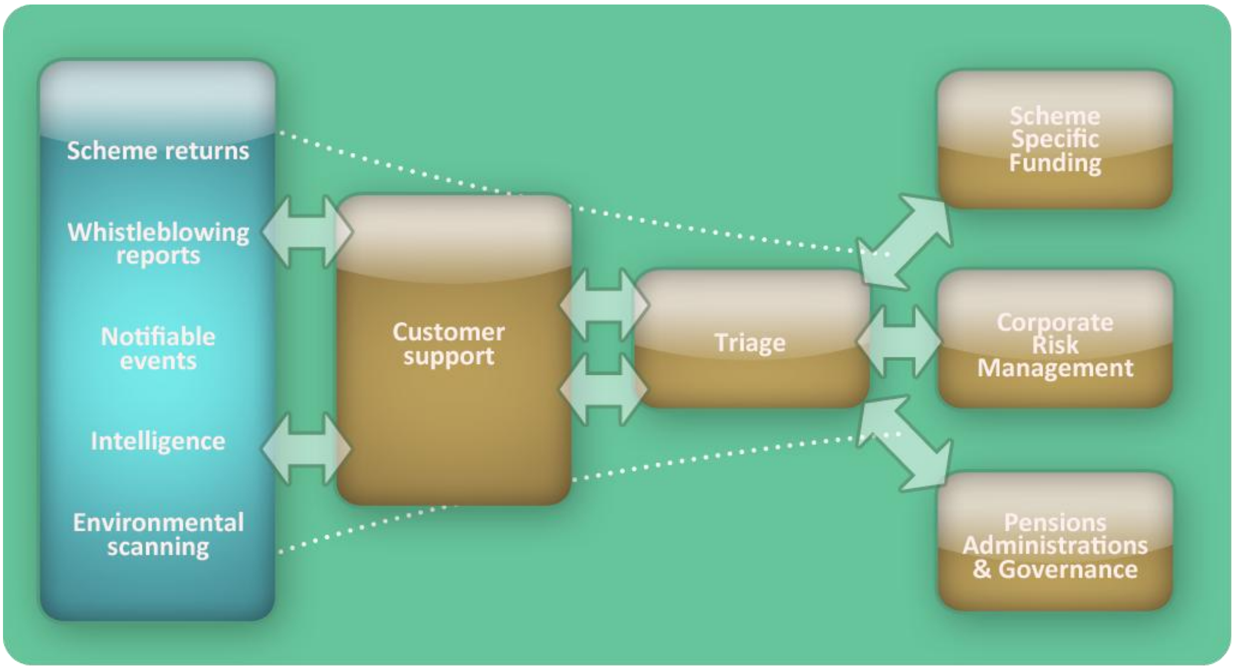
ensure that it is obtained to time and quality. Supervisory authorities may also wish to assign overall responsibility for information to a specific individual or team. Their responsibilities could include:

- developing and overseeing the information strategy;
- sharing intelligence with other authorities, both in the same country (*e.g.* other supervisors and criminal intelligence bureau and pension supervisors in other countries;
- obtaining information from some other sources;
- maintaining information quality by ensuring records are up-to-date, conducting validation checks and cross-checking between different sources for consistency;
- maintaining a database of strategically important information, to be used across the organisation to ensure consistency;
- ensuring that confidential information is kept confidential, and that there is an up-to-date published policy on confidentiality;
- analysing available data to identify new systemic risks or risks to individual entities;
- enabling decisions on the supervisor's response to information that may suggest an intensified risk to an entity, *e.g.* mandatory exception reports;
- supporting inspection teams with the provision of the information they need;
- providing basic data for strategy and planning, the design of interventions and research and;
- co-coordinating with the pension industry to check that the process of information collection does not constitute a prohibitively high burden or could be mitigated in some way.

While this team may not be responsible for research, strategy or planning, and may leave some information analysis to other teams in the supervisor, it should work closely with these other teams and ensure they comply with the supervisor's policies on information handling. The United Kingdom Pensions Regulator's 'Triage' team (see country case study for the United Kingdom) provides an example of a team with many of these responsibilities.[33] The Australian supervisor (Australian Prudential Regulation Authority) and German supervisor (Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin)) take an approach whereby analysis of off-site pension fund data is undertaken by the same team that undertakes on-site supervision of the fund. They use their off-site information and analysis to focus the inspection, in particular to determine areas for further in-depth investigation.

[33] The triage team operates in conjunction with the policy pipeline team to ensure that areas identified as problematic during day to day interactions with plans are fed through to the policy teams to enable consideration of whether further guidance is needed'.

Figure 2: UK pension regulator's triage team



Source: The Pensions Regulator, United Kingdom

SECTION 3: INDUSTRY SKILLS AND READINESS

A. Communication and Guidance

Communication

Risk-based Supervision (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 judgements, to implement appropriate risk management practices, and to be responsible for their decisions. In an industry where decisions have been heavily constrained by regulation, such freedom and responsibility is not always welcomed. Both supervisory staff and industry participants can feel alienated if the move to RBS runs too quickly ahead of the capacity of those involved to adapt, or if they have insufficient warning of the challenges involved. RBS is a journey that should be shared by all parties involved – and indeed, as supervisory authorities which have made this move have found, represents an opportunity to 'raise the bar' and the skill level both within the supervisory authority and the industry as a whole.

Consequently, an additional management consideration in moving to RBS is the critical importance of good communications. Building communication with and understanding amongst the pension community as a whole is an important foundation for RBS. Indeed, RBS could be seen as being implemented through the following steps:

- application by pension plan or fund and other third party professionals of best international standards to the risk management, investment, funding and administration of pension plans or funds;
- reliance on independent professionals to apply standards and advise the supervisory agency of any failures to meet standards;
- communication of standards to pension plan or fund and third party professionals, to ensure effective deterrence against lack of compliance; and finally
- supervisory oversight on a risk-based basis.

The first two items are related to education and standard setting among industry participants. For risk based supervision to be successful, supervisors must be able to rely on pension plans or funds following best international practices in relation to governance, and to the key functionaries and professionals catering to the pension plans or funds (governing board members and senior management, actuaries, accountants, lawyers, investment professionals) operating at the highest standards of integrity. In this way, the supervisor can have some confidence that pension plans or funds are being operated in a satisfactory manner. Some pension supervisory authorities note that over 80% of errors are due to lack of knowledge and understanding and a relatively small proportion due to willful acts of fraud or deception. It is important to reduce the errors caused by ignorance and poor practices, so as to concentrate the supervisor's efforts on finding genuinely problematic cases.

1.

Suggestions for communicating risk-based supervisory approach to industry

IOPS Working Paper No. 4 (IOPS 2007b) makes the following suggestions for successful communications with the broader pensions community:

- Explain the risk-based supervision externally, to the pension industry and a wide group of stakeholders;
- Issue guidance notes explaining requirements of the various stakeholders and the standards expected of them;
- Use informal discussion groups/road-shows to enlist feedback, take views on board and ensure 'buy-in' with the new process;
- Ensure that communication is on-going, with pension funds understanding the new relationship with the supervisor, as well as just the information supplying requirements;
- Use secondees to take the message of the new process back into industry;
- Work closely with other professional bodies such as accountants and actuaries;
- Ensure good communication between regulators and supervisors;
- Make sure that 'whistleblowers' understand their role in the process (both what they should and should not tell the supervisor);

Guidance

One of the key changes a pension supervisory authority has to make when adopting a risk-based approach is issuing guidance to supervised entities as to what is expected of them and what is considered as good practice, which would therefore result in a lighter supervisory approach. Under a rules-based approach, supervised entities simply have a set of regulations to comply with, whilst under RBS, they also have to understand how the supervisory authority expects them to behave whilst fulfilling regulations and requirements. Issuing such guidance may also be an important way for the supervisory authority to assess the capabilities of the pension sector as a whole, identifying areas of systemic risk, and attempting to improve the system-wide standards.

In order to help industry make the necessary adjustments required under RBS, the pension supervisory authority may issue guidance from time to time on various issues relating to the handling of identified or anticipated risk factors. The guidance issued by a risk-based supervisor will typically be much less prescriptive, but more explicit about what the supervisor expects of the Board/senior managers of the entities involved. Guidance issued by a risk-based supervisor should explain the objectives of the guidance rather than simply being a process map of how to comply.

One key area where the pension supervisory authority will need to provide guidance is in relation to pension funds' risk management systems. RBS allows much of the responsibility for risk management to rest with the individual pension fund companies themselves, while the supervisory authority verifies the quality of the fund's risk management processes and adapts its regulatory stance in response. Hence the industry will need to be told what sort of risk-management systems the pension supervisory authority expects them to operate. For example, the supervisor could require pension funds to conduct periodic stress testing as part of their risk management processes; communicate the results to their boards of directors; and provide copies of the reports to the supervisor. The supervisor might also develop questionnaires to be completed by pension funds, designed to elicit information on the nature, scale and complexity of their risks and the manner in which they are being managed.

A definition and discussion of risk-management systems, including how these should be checked as part of the pension supervisory authority's assessment of risk mitigants, is provided in Module 4 of the IOPS Toolkit.[34]

Where the supervisor has to fulfill an obligation to provide education to the supervised entity, education can be as important part of the supervisor's approach as inspection. Where the supervisor's risk analysis shows that poor understanding by supervised entities or beneficiaries poses a risk to its objectives, the supervisor (where obliged to do so) may need to become much more proactive in the education of supervised entities. This may involve a greater role for communications professionals in tailoring guidance so as best to communicate messages to different audiences and the use of a wider range of media including interactive on-line tools.

B. Quality of Supporting Professionals

The quality and readiness of professionals supporting the pension industry is also an important consideration when evaluating the speed and ease with which a RBS system can be implemented. In cases where training of pension supervisory staff is needed to prepare for RBS, consideration should also be given to including the industry in that training to assist them to develop the skills and culture needed and to ensure that they are ready for the changes ahead.

Industry associations can play a helpful role in preparing the industry for RBS, especially in the area of training. In well-developed markets, a national association may have various chapters representing funds, Board members, sponsors/employer groups, members, service companies and other professionals. Objectives and activities of the associations can include:

- representing pension plans or funds , employer groups, and Board members/trustees in policy debate and legislative development;
- creating public awareness of pension matters;
- developing and administering professional standards for industry participants including licensing, codes of conduct, dispute resolution and disciplinary actions;
- promoting best practice in the operation of pension funds, including creating economies of scale for delivery of services, IT, management and so on;
- providing professional development for industry participants including Board members/trustees, as well as opportunities for networking, information sharing, and debate on pensions and related issues; and

[34] For a full description of pension funds' risk management systems see (IOPS 2009b) and (OECD/IOPS 2010)

- providing information and resources to ensure members, especially Board members, are kept up to date on matters relating to their obligations and matters relating to the pension industry more generally.

Regardless of whether or not the industry is included in the training programs, there is a need to consult widely with industry and to make sure that they are aware of the responsibilities they will face, as well as the consequences of taking their responsibilities too lightly.

The fact that risk-based supervision relies on good governance practices among pension plan or fund administrators and relies on the work of third party administrators and professionals is a challenge for pension supervisory authorities overseeing developing pension systems. Until they can be assured that all personnel are functioning at the appropriate standard, an extra layer of vigilance will need to be provided.

One key group, with respect to defined benefit (DB) funds, is actuaries. Almost all DB pension fund laws and/or their regulations include a role for actuarial assessment. Indeed, placing increased responsibilities onto professionals such as auditors and actuaries is a characteristic of most RBS frameworks. In addition to financial condition reports, actuarial projections and valuations, actuaries may be called upon to give advice on the design of plans or funds, investment advice, transfer of rights, and so on. The challenge in many developing economies is whether the domestic actuarial profession has the critical mass and appropriate expertise to meet current demands and sustain the profession into the future. However, if capable actuaries are available on a consulting basis, the necessary work can be carried out.

C. Capital Market Development

Supervisors in developing economies need to set up systems that, while based on experiences of developed countries, are suitable for the country's current level of financial system development. As these financial systems evolve and improve, risk based supervision of pension plans or funds (and other financial entities for that matter) can be improved towards levels of sophistication seen in more developed countries. As discussed in the Introduction to the IOPS Toolkit, supervisory authorities need to move gradually from a rules to a risk-based supervisory approach as industry, economic, etc. conditions allow.

Module 3 of the IOPS Toolkit discusses how systemic risk issues may need to be given prominence with the risk-assessment of supervisors overseeing less developed economies. The pension supervisory authority should appreciate any limitations and risks associated with capital markets and adjust RBS to recognise that internationally accepted 'best practice' regarding investment strategies that may not be easily replicated locally. For example, there is no point including scores for Asset Liability Matching into an overall risk-assessment if suitable hedging instruments are not available. Likewise, where suitable diversification is not possible (due to limited capital markets), all pension fund portfolios may have to be considered high risk.

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