Working Paper No. 4
1 August 2007

Experiences and Challenges with the Introduction of Risk-Based Supervision for Pension Funds

THE INTERNATIONAL ORGANISATION OF PENSION SUPERVISORS

FIONA STEWART (OECD)

Working Paper No. 4
1 August 2007

ABSTRACT

Experiences and Challenges with the Introduction of Risk-Based Supervision for Pension Funds

Given the move by other financial sectors to initiating a 'risk-based' approach to supervision, pension supervisory authorities are also looking to adopt such methods. Following the lead of pioneering countries - such as the Netherlands, Australia, Denmark and Mexico – many of the pension supervisory authorities which are members of the IOPS have been or are planning to introduce a similar risk-based approach. This paper looks at different countries which have learnt from these pioneers, (South Africa, Kenya, Germany, the UK and Croatia), and examines their experiences and the challenges they have faced in moving to such a risk-based system, with the intension of drawing lessons for other IOPS members intending to make a similar move.

Keywords: pension, supervision, risk-based, stress testing, risk parameters, risk mitigants.

Copyright IOPS 2007

http:/www.iopsweb.org

IOPS Working Papers are not formal publications. They present preliminary results and analysis and are circulated to encourage discussion and comment. Any usage or citation should take into account this provisional character. The findings and conclusions of the papers reflect the views of the authors and may not represent the opinions of the IOPS membership as a whole.

Table of Contents

I. **Introduction** 5

II. **Background on Countries' Pension and Supervisory Systems** 6

i. South Africa 6
ii. Kenya 9
iii. Germany 13
iv. UK 15
v. Croatia 19

III. **Why is a risk-based approach to supervision being adopted?** 22

IV. **What are the main problems which have been encountered in the introduction of risk-based supervision?** 22

i. Adaptation of Models 23
ii. Reorganisation of Supervisory Authority 25
iii. Data Collection 29
iv. Staff 31
v. Industry 34
vi. Powers 37

I. Introduction

This paper is part of a project led by the World Bank in conjunction with the International Organisation of Pension Supervisors (IOPS), which examines the introduction of a risk-based approach to the supervision of pension funds. As part of the project, the World Bank has produced in-depth case studies of countries which have been pioneers in the introduction of a risk-based supervisory approach within the field of pension supervision – the Netherlands, Australia, Denmark and Mexico. The supervisory authorities in these countries have developed sophisticated risk-based supervision models, with quantitative and qualitative analysis of the financial and operational risks applicable to their DB or DC pension systems.

Many of the pension supervisory authorities which are members of the IOPS have been or are planning to introduce a similar risk-based approach. Part of the IOPS contribution to the project is therefore to look at different countries which have learnt from these pioneers, examining their experiences and the challenges they have faced in moving to such a risk-based system – with the intension of drawing lessons for other IOPS members intending to make a similar move.

Detailed country reports have been produced by IOPS members on the pension and supervisory systems in South Africa, Kenya, Germany, the UK and Croatia. Background on these countries and lessons learnt from their experiences are outlined below.

Before looking at the countries and their experience in more detail, it is worth stating briefly what is meant by 'risk-based supervision' for pension funds. Pension supervision involves monitoring the activities of pension funds to ensure that they remain within the requirements of the pension regulatory framework, in order to ensure protection for members and beneficiaries. Supervisory activities have a breadth or variation depending on the regulatory and legal environment, policy choices and a variety of other factors. Risk-based supervision specifically attempts to vary the scope and intensity of supervision according to the level of risk to which individual pension funds are estimated to pose (in regard to the individual members and beneficiaries of the pension fund and also to the pension fund itself). This is seen as a more 'sophisticated' approach than the former 'compliance' based attitude to supervision, where all pension funds (or indeed financial institutions in general) were treated the same. A risk based approach allows scarce supervisory resources to be targeted at the pension funds which are seen to be at most risk and allows supervisory authorities to take a more pro-active approach, attempting to avoid potential problems before they occur (as opposed to a 'reactive' compliance based regime). A broad definition of risk-based supervision would include the whole risk management architecture, including risk-based regulations and risk-based supervisory procedures. A narrower definition considers only the supervisory part of the overall risk management architecture. Such a risk based approach to pension supervision is supported by the IOPS 'Principles of Private Pension Supervision'[1].

1. **Principle 5: Risk Orientation** '*Pension supervision should seek to mitigate the greatest potential risks to the pension system'*

5.1 The objectives of private pension supervision should be risk-based. Pension supervisory authorities should have a strategy for allocating their finite resources which targets mitigating actions on pension funds or plans which represent the highest risks to achieving the supervisor's objectives. This assumes that they understand the probability and impact of potential risks.

II. Background on Countries' Pension and Supervisory Systems

i. South Africa

Pension System

Although the main source of income for over 75% of individuals over the retirement age in South Africa is a means tested, social grant (the SOAG), the country does also have a well developed occupational pension and private retirement savings system, albeit with a limited coverage of the working population.

Employment based retirement provision, with joint contributions by both employers and employees, may take two forms: pension funds (which must pay out a least 2/3 in annuities with employee contributions tax exempt), or provident funds (paying out in lump sum form with generous tax concessions) – employers often establish both to maximize tax concessions. Most pension funds are now defined contribution in nature, with the system characterized by a large number of small funds (over 13,000, with more than 50% having less than 20 members). 'Umbrella' funds covering more than one employer are also common. Funds are often managed by professional administrators, with the licensing of service providers therefore being a key role for the supervisory authority. The pension system operates on a 'trust' basis, with funds having a legal personality separate from the plan sponsor and a management board being responsible for the assets. Quantitative investment restrictions still apply within the country. Personal savings also exist in the form of retirement annuity funds, individual insurance policies, housing and other savings. Problems with coverage and 'leakage' have led to the government proposing reforms for the South African pension system, including the possible introduction of mandatory individual accounts.

Approach to Risk-based Supervision

The pension industry is supervised by the Financial Services Board (FSB), a partially integrated supervisor with oversight responsibilities for all financial services outside banking.

The risk-based supervisory approach of the FSB has been adapted from the Australian model. The FSB uses the same model for all financial institutions, assigning a risk score to each pension fund which then determines the supervisory approach. The process in can be summarized as follows:

1. Identify and classify the internal and external risks to institutions together with the development of the trends and key drivers of those industries;
2. Assess the important risks to each institution or category of institutions collating both qualitative and quantitative information into an overall assessment of the risk;
3. Determine the probability and weighting of the important risks, combining this with the impact to derive an overall risk rating for each institution;
4. Prioritise the institutions;

5.2 Pension supervisory authorities should be pro-active, seeking to avoid significant problems before they occur and intervening, in a proportionate way, at as early a stage as possible and searching for those supervisory instruments which add most value to the desired supervisory result.

5. Determine a supervisory response for each selected institution;
6. Confirm the appropriateness of the supervisory response by doing an internal review of the assessment before the response is communicated to the institution;
7. Communicate the assessment and supervisory response to the institution on a confidential basis.
8. Carry out additional assessments, assess any escalation in the risks, and monitor the outcomes of the risk mitigation undertaken by the institution.

An initial rating of institution (NB the FSA rates both pension funds and administrative and fund management institutions) will be given based on the following, weighted risk factors. The information to be used for the risk-based supervision will be supplied by the fund or administrator electronically. Clients can enter the information, update it, and, once they are happy, electronically sign it. Thereafter the information will not be able to be changed, but will be accessible to authorised FSB employees. Returns and other information relevant to the interim rating will be drawn from the Registrar's database and the rating will be adjusted accordingly.

Inherent Risks	Management and Control	Capital Support
Counterparty risk	Board	Current coverage
Balance sheet risk - Investment risk - Expenses risk	Senior Management	Earnings
Operational risks	Operational management (including systems + service levels)	Access additional capital
Liquidity risk	Risk management	
Legal + regulatory risk	Compliance	
Strategic risk (incorporating contagion risk)	Independent review	

The initial risk rating of the entity is determined as Impact x Probability. Impact depends upon size. It is suggested that the table used for members is increased by a factor of 10 when assessing administrators.

Impact rating	Determine the higher of the impact ratings according to the number of members or fair value of the assets, in either case at the previous financial year end (Where assessing an administrator, the numbers will be increased by a factor of 10)	
	Number of Members	**Asset size**
5	10 000 or more	More than R1000 million
4	1 500 to 9 999, inclusive	Between R500 million and R1000 million
3	500 to 1 499, inclusive	Between R100 million and R500 million
2	50 to 499, inclusive	Between R10 million and R100 million
1	Less than 50	Less than R10 million

The probability will depend upon risk factors and the associated weights, using the formula:

Probability = Inherent Risk Score + (Management & Control Score – 3) + Capital Support Score

The interim assessment will be communicated to institutions and to other relevant departments within the regulator who are also responsible for the supervision of the entity, such as the insurance department where an insurer is the administrator, evaluating the results; reviewing the probability and impact ratings and determining the final priority. The final probability and impact ratings will take account of management and control actions and shareholder, capital and reinsurance support. An appropriate supervisory response must be determined. This must be internally reviewed in order to provide overall quality and consistency control. The response must be communicated to the institution, setting out the issues that were identified and the actions to be taken by the institution and / or the regulator to address the issues. The response will set out timelines for mitigation to be completed as well as when the next assessment will take place. The resulting priority and supervisory response from the FSA will be one of the following:

Rating			Frequency of on-site visits
Priority score		Description	
5	E	Non-viable, insolvency imminent	Formal inspection to be requested on an urgent basis.
4	D	Future viability in doubt	Request the fund to lodge, within 3 months, a plan to mitigate risks. Schedule visit after assessment of this plan. The urgency will depend upon the FSB's satisfaction with the plan. All such funds to be visited within 36 months.
3	C	Some risk, but viability is not seriously doubted	Schedule to visit 15% a year, so that every fund receives a visit at least once every 72 months
2	B	Early warning	Theme work only
1	A	No or minor problems	Theme work only

It is intended that only the funds or administrators identified with the highest-risk rating will be told their interim rating and will be given an opportunity to challenge this rating. Funds whose rating is below the threshold will not have their computer-generated interim ratings reviewed. Low priority cases will not necessarily be visited, except perhaps as part of an investigation into a particular aspect of retirement funding practice or regulation, i.e. as part of theme work.

Where the fund proposes mitigatory action that is acceptable to the regulator, and this can be followed up without an on-site visit, (for example through monitoring the subsequent questionnaire / annual statements / actuarial valuation), the files will be appropriately annotated as to the action required and the relevant department of the regulator will be informed to watch out for this when the documentation is supplied.

ii. Kenya

Pension System

The retirement benefits sector in Kenya is composed of the civil service scheme, the National Social Security Fund (NSSF), occupational schemes and individual pension schemes.

Scheme Type	Civil Service Scheme	National Social Security Fund	Occupational Schemes	Individual Schemes
Legal Structure	Act of Parliament	Act of Parliament	Trust Deed	Trust Deed
Membership	all civil servants	formal sector workers in companies with 5+	formal sector workers in companies that have schemes	individuals formal/informal sector join voluntarily
Funding	Non-funded	funded	funded	funded
Regulation	Exempt from the Authority	Subject to the Authority	Subject to the Authority	Subject to the Authority

The coverage of the pension schemes is currently 15% of the total work force. The distribution of membership in the schemes as a proportion of the total membership in retirement benefits schemes in the country is as follows:

Scheme Type	**Percentage**
Occupational Retirement Benefits Schemes	10.4%
Individual Retirement Benefits Schemes	0.6%
Civil Service Pension Scheme	22.0%
National Social Security Fund	67.0%

The NSSF has the highest proportion of membership at 67% with estimated membership of 800,000 followed by the civil service pension scheme at 22%. The occupational retirement benefits schemes and individual retirement benefits schemes, which are currently about 1350, account for about 10.4% of total scheme membership in the country.

Approach to Risk-based Supervision

A specialized agency, the Retirement Benefits Authority (RBA) is responsible for the supervision of funds.

The risk-based supervisory approach of the RBA has also been adapted from the Australian model. The goal is to measure the solvency of DB schemes and the investment risk of DC schemes, applying a risk score to each scheme which then determines the supervisory response.

In terms of risk measurement, the RBA has identified the following risks as the main areas for consideration:

1. **Counterparty Default Risk**: Risk of loss from the failures of a counterparty to meet its obligations

2. **Balance Sheet and Market Risk**: Risk of losses due to movements in interest rates and other market prices

3. **Operational Risk**: The risk of losses resulting from inadequate internal processes, people and systems – whether these are internal to the regulated entity or in a service provider

4. **Liquidity Risk**: The risk that an institution will not be able to meet its payment obligations as they fall due without excessive cost

5. **Legal and Regulatory Risk**: The likelihood of adverse consequences arising from the failure to comply with all relevant laws and regulations

6. **Strategic Risk**: Risks to the continued viability of an entity as a result of change in the operating environment, including internally driven change such as merger or introduction of new product line

7. **Contagion and Related Party Risk**: Risk to an entity's business as a result of close association with another entity – the risks may be direct through financial exposure or indirect through reputation damage.

Table 1. Proposed Weights to be Applied in Categorizing Pension Schemes

	PARAMETER		LEVELS	COMMENTS	WEIGHT
1	Size of the scheme as measured by the fund value	Strategic risk	7	The larger the size, the higher the risk	5%
2	Funding level for defined benefit schemes	Liquidity risk	4	Does the scheme meet the minimum funding requirements?	10%
3	Level of administrative expenses	Operational risk	3	The higher the level of administrative expenses, the higher the risk	5%
4	Level of compliance with the Authority requirements on periodical returns	Legal and regulatory risk	2	Has the scheme submitted all the required returns?	10%
5	Rate of return on members funds	Balance sheet and market risk	2	The lower the rate of return, the higher the risk	10%
6	The degree of diversification of the investment portfolio (compliance with the Authority investment guidelines).	Balance sheet and market risk Legal and regulatory risk	2	Has the scheme complied with the Authority investment guidelines?	5%
7	Proportion of accrued expense to total members funds for defined contribution schemes	Liquidity risk	2	The higher the level of liabilities, the higher the risk.	5%
8	Segregation of the roles of fund manager, custodian and trustees	Contagion and related party risk Counterparty default risk	2	Are the various roles segregated?	5%
9	Changes in actuarial assumptions and accounting policies	Strategic risk	2	Has the scheme changed its actuarial or accounting policy in the recent past?	3%
10	The Audit opinion and the going concern assumptions	Operational risk	2	Has the annual report been given a clean audit report?	6%
11	Unremitted contribution	Counterparty default risk Liquidity risk	2	Has the scheme been remitting members contributions?	15%
12	Complaints	Operational risk Legal and regulatory risk	5	Number and type of complaint received	13%
13	Registration Status	Legal and regulatory risk Operational risk	3	Status of the registration process	8%

The RBA will, on an annual basis, carry out a risk profiling exercise aimed at identifying scheme with high level of risk. The RBA has already identified the specific parameters which when reviewed on a continuous basis will serve as key indicators of the risk exposure of individual schemes. A proposal for weighting the risks has also been suggested.

The RBA has also already identified a number of risk mitigants to be considered in the assessment process. These include:

1. *Quality of the Board of Trustees:* Covers their understanding of responsibilities, their experience, competence and integrity and the presence of conflict of interest.

2. *Quality of principal officer***:** His/her experience, competence and integrity.

3. *Effectiveness of operational management:* Includes human resource policies and management of outsourced operations by the Board of Trustees.

4. *A funds information systems and financial controls:* Capacity to produce timely and reliable information for regulators and members.

5. *Adequacy of risk management systems:* Quality of arrangements for identifying and measuring risk, setting limits, monitoring compliance and reporting.

6. *Compliance culture and procedures:* Compliance with laws and regulations, and involves the assessment of the fund's information systems.

7. *Adequacy of independent review:* Internal and external audit, actuarial reviews.

The Authority has developed a *Compliance Visit Manual* which is to be used during the on-site visit, and On-*Site Inspection Guidelines* to be used as a reference tool by the Compliance Officers during the on-site visit exercise. The Authority proposed that a notice period of thirty (30) days be given to the scheme prior to the planned on-site. However, in cases of emergency, the supervision deadlines should be changed in the interest of the effectiveness of the supervision exercise. There will be three types of on-site visits: Comprehensive, targeted and follow-up. Depending on the outcome of the on –site visit, a concrete control plan will be derived. The on-site visit will be preferably conducted in teams.

As well as refining the qualitative and quantitative measures to be used in the initial risk scoring of schemes, the RBA is also looking to develop a methodology for 'stress tests' or a 'value at risk measure' and standard procedures for choosing and applying interventions.

iii. Germany

Pension System

Germany's pension system consists of the following parts:

- *Statutory Pension Insurance (Gesetzliche Rentenversicherung - GRV):* providing old age, disability and survivors' benefits (in the case of registered co-habitation), financed on a PAYG basis. Statutory pensions insurance, however, offers social security not only in old age, but also during the working phase - in the shape of rehabilitation benefits or pensions because of reduced earning capacity. The vast majority of the population is covered, with statutory pension insurance making up around 85% of an average household's retirement income. Starting in 2012 the retirement age of 65 is being gradually increased to 67 by 2029. Pensions are largely calculated from the respectively insured income. Based on years and level of contribution with 45 year average earnings providing around a 70% replacement rate.

- *Occupational pension schemes (company pensions):* though voluntary, since 2001 employees in Germany have had the right to employee funded, occupational retirement provision and these funds are now growing (with over half of those subject to compulsory social insurance also having an occupational pension by 2003). Occupational plans in Germany are DB in nature with employers deciding how occupational retirement provision should be implemented (sometimes in conjunction with collective agreements), choosing from the following five different forms (2 or more may be implemented by an employer): Direktzusage (book reserves), Unterstützungskassen (support funds), Direktversicherung (direct insurance), Pensionskassen (pension institution) and Pensionsfonds (pension funds). Pensionskassen are life insurance companies the sole purpose of which is to provide financial protection linked to an employment relation against biometric risks. Occupation pension assets amounted to over €381bn at the end of 2004 – Direktzusage (book reserves) still being the most popular form (€222bn). About 15.3 million employees had occupational retirement provision in March 2003.

- *Individual pension provisions:* private insurance contracts known as Riester products were introduced in 2001 (8m being established by the end of 2006). A minimum guarantee is required (capital preservation), withdrawals are not allowed until age 60 and must be taken as a life-annuity. Tax advantages and subsidies apply to these products - the level depending on individual income levels and number of children. In 2006 and 2007 the basic bonus amounted to 114€ and the bonus per child 138€ annually; moreover up to 1.575 Euro might be asserted to income taxes paid.

Approach to Risk-based Supervision

Occupational Pension funds, such as Direktversicherung (direct insurance), Pensionskassen (pension institution) and Pensionsfonds (pension funds) are supervised by the Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht, BaFin). The authority was established in 2002 as an integrated supervisor - responsible for the supervision of banks and financial service providers, insurance undertakings and securities trading – in response to the financial institutions themselves merging to become financial conglomerates and offering increasingly overlapping products. In addition to over 480 insurance companies, BaFin supervises 156 Pensionskassen and 24 Pensionsfonds (as of December 2006).

As BaFin is an integrated supervisor and as Direktversicherungen, Pensionskassen, Pensionsfonds and life insurance products are closely linked in Germany, the approach to risk-based pension supervision adopted by BaFin is based on the system used to supervise the insurance sector. One important source of information for supervisory action is the auditor's report on the annual account of the undertaking, besides declarations and notifications provided by the supervised entity. On-site inspections and interviews on specific aspects supplement the information retrieval for supervisory action if needed. The overall risk-based supervisory system is based on measures, stress tests and risk scoring. One major measure, the maximum guaranteed interest rate, was reduced from 2.75% to 2.25% for Direktversicherungen and Pensionskassen as of 1st January 2007. It also applies to Pensionsfonds if they provide similar guaranties to insurance entities.

Direktversicherungen, Pensionskassen and Pensionsfonds are required to submit 'scenario calculations for forecasts' several times a year, to assess their current financial situation and future trends should there be any declines in their investments. Stress tests have been added as an additional quantitative instrument amongst reporting requirements (so far only applied to Pensionskassen and Direktversicherung).

The stress test (applied to Pensionskassen and Direktversicherungen) is supposed to verify if an insurance company is able to meet its liabilities under the insurance contracts at all times and cover the required regulatory capital with appropriate assets despite a prolonged crisis on the capital markets, and without having to resort to taking counter measures. For this purpose BaFin studies the effects the following scenarios would have on the next balance sheet date:

- Scenario (A 35): decrease in the market value of shares by 35%, considering credit risk
- Scenario (R 10): decrease in the value of fixed-income securities by 10%, considering credit risk
- Scenario (RA 25): simultaneous decrease in the market value of shares by 20% and in fixed-income securities by 5%, considering credit risk
- Scenario (AI 28): simultaneous decrease in the market value of shares by 20% and in the market value of real estate by 8%, considering credit risk

The stress test scenarios likewise take into consideration risks associated with credit ratings in case of fixed-interest securities and loans with reductions between 0 and 30 per cent. Depending on the result of these scenarios the insurance company is subject to certain notification obligations towards BaFin. Not passing the stress test does not ultimately or automatically imply insolvency of the company in question. In fact it only gives a signal regarding the reduced risk-bearing capacity of the entity. Potential measures to be taken are acquisition of additional capital, regrouping of investments, hedging of investments and reduction of profit distribution to improve the financial situation.

In addition, insurance companies have to carry out at least quarterly internal stress tests based on a BaFin set of minimum scenarios. Depending on the result, certain notification obligations have to be met. In the case of small entities, BaFin is entitled to alleviate the conduct of stress tests on an individual basis, based on the kind and volume of investments and the kind of insurance business the Pensionskasse or Direktversicherung forms. Pensionsfonds und Pensionskassen furthermore have to furnish realistic forecasts on the dates BaFin fixes (in general at least for the key date 30 June). The aim is to forecast the surplus on the next balance sheet day. The forecasting also

considers hidden reserves or hedging strategies and comprises also an inquiry on the size of the bonus paid out for the next year.

BaFin's risk scoring system is designed to enable the classification of the supervised entities into risk classes – using a traffic-light model - in all stages of the supervisory process by using quantitative key figures and qualitative criteria. Risk classification is currently done via a methodological survey, with an assessment of "impact" of the supervised entity on the market if the entity is in a precarious situation and "quality" of the supervised entity being taken into consideration. The assessment of the "impact" is based on the total of assets of the entity. The "quality"-assessment is based on four sub-scores: security, success, growth and quality of management. As a result, the supervised entity can be classified into one of the possible fields of the following risk matrix. The classification will be used for supervisory planning (i.e. the planning of the sensitivity of supervision, the setting of priorities and the conduct of on-site inspections). BaFin envisage that in the long term an automatic assessment system will be introduced.

		quality			
		A	B	C	D
impact	high				
	medium				
	low				

iv. UK

Pension System

The UK public pension provides a relatively modest retirement income for workers, based on a contribution-based basic pension, supplemented by means-tested social security benefits, and an additional, earning-related top-up - the Second State Pension – provided either by the State or the occupational pension scheme sector. These are supplemented by a large voluntary private pensions sector, comprising DB or DC occupation schemes (run on a trust basis) and personal pension arrangements (including stake-holder, low cost pensions). Around half the workforce has an additional pension arrangement. In order to try and increase the private pensions coverage rate, the UK government is planning to introduce a new *National Pensions Saving Scheme*, whereby workers who do not already have an occupational pension will be automatically enrolled into this scheme with the option to opt out within a certain period.

Approach to Risk-based Supervision

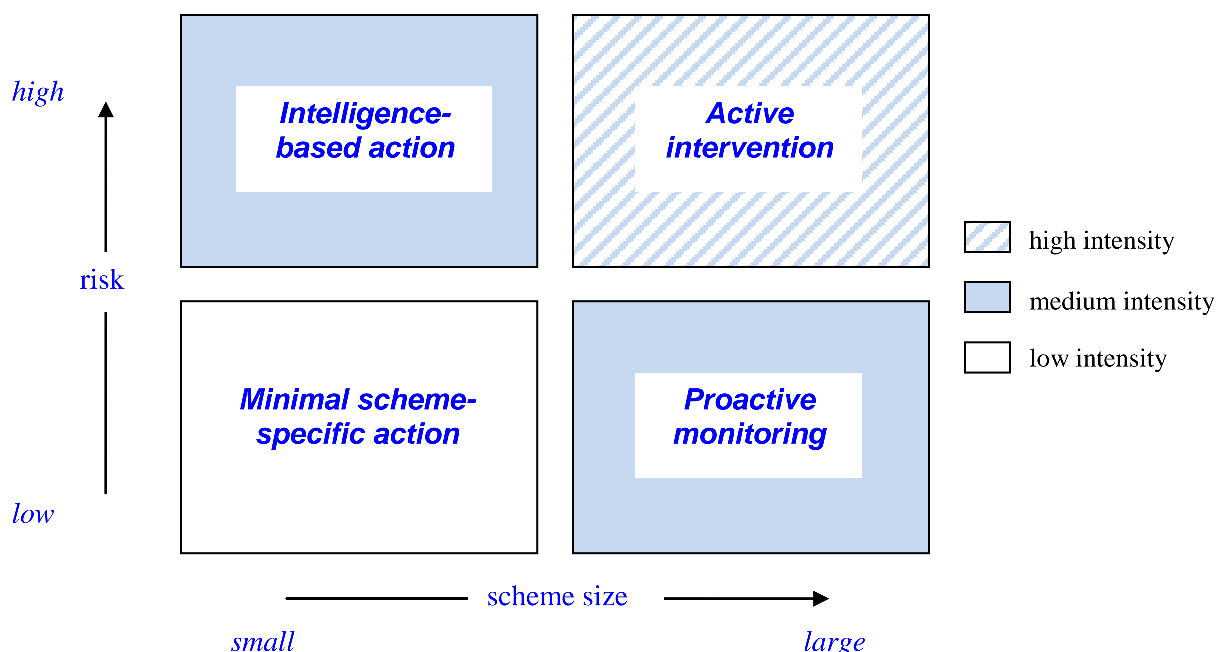
Although the UK operates under an integrated structure for financial sector supervision – under the Financial Services Authority – pension supervision is handled by an independent agency. The new Pensions Regulator (TPR) was established in 2005 to cover work-based pensions and was given a wide range of intervention powers under the new Pensions Act. The Pension Protection Fund (PPF) was set up at the same time to pay compensation to members of DB schemes who lost pension benefits on their plan sponsor becoming insolvent whilst their pension scheme was underfunded. One of the 'risks' being assessed by TRP is the potential impact on the PPF.

The UK's approach to risk-based supervision is somewhat different from the other countries discussed. Although a standard model of for risk assessment is used, the TPR takes a slightly different approach to regarding its supervisory response – favouring guidance and communication over intervention where possible.

In terms of funding, a new approach *Scheme Specific Funding*, was introduced at the same time as TPR was launched. This is based on prudent assumptions and recovery plans which are required for those schemes in deficit should take appropriate recognition of the risk to members taking account of what is reasonably affordable for employers. TRP tries to work through guidance and communication rather than intervention to ensure that pension scheme trustees meet these goals. To help focus on schemes that pose the greatest risk, TPR uses a filter mechanism based on triggers to identify schemes whose funding plans seem more likely to be based on imprudent or inappropriate assumptions. Attention will also be given to schemes where no agreement between trustees and employers has been reached. The triggers relate separately to the technical provision and the recovery plan (though they are interlinked) and are derived from existing reporting requirements so as to avoid overburdening schemes. Schemes which trigger will be subject to some form of further assessment.

The analysis of impact – and decisions concerning TPR's supervisory response – is done via the 'Risk and Intervention Model' outlined below. The model takes into account an assessment of both the *leve*l of risk posed by a scheme to its members and the potential *impact* on scheme members should the identified risk materialise. The model is driven by the structure of the pension industry in the UK. Although there are a large number of schemes (over 84,000 in total), most members are concentrated in a few thousand large schemes. For both DB and DC schemes TPR therefore focuses intervention on private sector schemes with over 1000 members (covering over 85% of members), and those smaller schemes where there is a significant risk to members' benefits.

Figure 1. The Risk and Intervention model



*Includes hybrid schemes

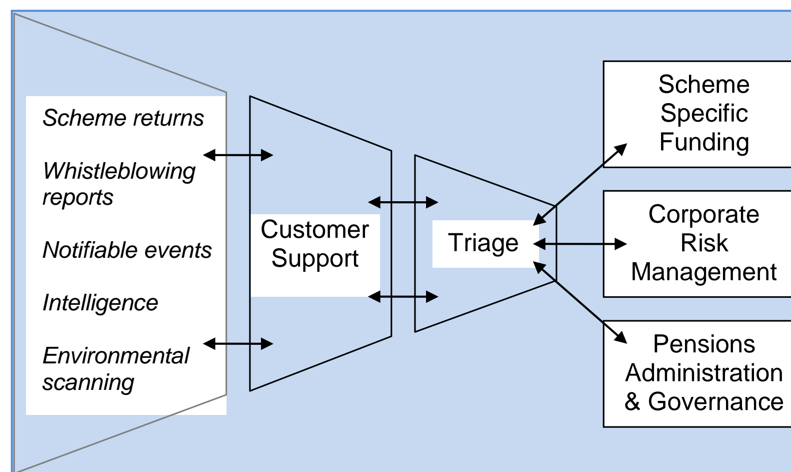
At any given time, there are likely to be 200-400 schemes in the **active intervention** quadrant. These are schemes with large memberships (1,000 or more) where large amounts of money are involved, and the mitigation of risks to these schemes is therefore the highest priority. All schemes in this category have individual case management, and TPR is likely to be engaged in direct talks with trustees and employers, as well as working collaboratively with other regulatory and enforcement organisations.

Large schemes where the severity of risk is lower fall into the **proactive monitoring** quadrant. At least 1,000 schemes occupy this category. Whilst TRP believes the immediate level of risk to be acceptable, the large number of members potentially affected by adverse circumstances means that it is seen as prudent to monitor corporate activity involving these schemes (such as restructuring or takeover activity) and to actively scan company and scheme information such as accounts and balance sheets. Monitoring the general environment within which employers operate, as well as specific market sectors, also helps the regulator to identify emerging risks which might make targeted intervention necessary.

Where incoming information about a smaller scheme does not give immediate cause for concern, the scheme remains in the **minimal scheme-specific action** quadrant. The emphasis with this very large number of schemes is on education and support – for example, through the regulator's codes of practice, educational activities, the provision of advice and engagement with the wider pensions community through events and roadshows. While reactive, 'light touch' regulation is appropriate for these schemes, TRP will nevertheless contact schemes proactively from time to time, for example to reinforce important messages about trustee responsibilities.

A scheme will move into the **intelligence-based action** category where an analysis of the data (whether direct from schemes or employers, from other bodies such as the police or the tax authority, or from the regulator's own scanning and intelligence-gathering activities) leads TPR to believe that scheme-specific intervention is advisable. In particular, there may be a thematic focus on taking action to encourage schemes to tackle specific needs that have been identified as raising systemic concerns, for instance in 2007 dilatory processes for scheme wind-up. Fraud or gross mismanagement are cited obvious examples, but TRP might also consider intervention where, for example, a history indicating a generic problem with a particular trustee, adviser or employer is identified. If appropriate, further investigation and direct discussion with those involved will take place to establish the facts before resources are allocated to scheme-specific intervention.

The process of passing funds along the 'risk pipeline' is handled by a series of teams. Initially Customer Support handles the large group of smaller, lower-risk schemes. Higher risk situations are then past into the organisation. A 'triage approach' is used to develop this workflow and identify the appropriate regulatory response. High risk work is then channelled into one of three regulatory practices, with the role of triage being to manage the flow of work to and between these practices.



Information which is fed into the model comes from a variety of sources. The pension schemes covering most of the membership are now required to submit an annual scheme return to the regulator, providing in-depth information on membership, trustees and advisers, financial circumstances of the plan sponsor etc. The smallest schemes have now to submit a less detailed return every three years. Significant breaches of legislation must also be reported (with 'whistleblowing' requirements now applying to a wider range of reporters), as must notifiable events. In addition information from other supervisory bodies (notably the Financial Services Authority) and other information in the public domain (such a company reports) play a part.

v. Croatia

Pension System

As with many Eastern European countries, in addition to a PAYG public pension, in Croatia individual accounts are also mandatory. All those under 40 at the time of the reform in 1995 had to participate in the new system, as did their employers (older workers having the option to join or remain under the old PAYG system). The pension contribution rate amounts to 20% (split between social security and individual accounts for those who remained in the mixed system). The individual accounts are managed by mandatory pension fund management companies. By law, these funds must invest at least 50% of their assets in conservative government securities issued by the Republic of Croatia or the Croatian National Bank, In addition, no more than 15% of pension fund assets may be invested outside the Republic of Croatia. All contributions are tax-exempt and the pension benefits from a personal tax allowance. Individuals have a free choice of pension management company, as well as the possibility of transferring the account to another fund, with the Central Registry (REGOS) assigning members who do not exercise their choice. On 31 December 2006, 1,322,010 members participated in eight mandatory pension funds. The retirement age is 65 for men and 60 for women.

Voluntary pension funds also exist for those who wish to make additional contributions. These operate according to the same principles as the mandatory savings accounts with one exception – the insured person decides on the amount of contributions he makes. Not only private pension companies but also trade unions and employers may establish voluntary pension funds, with both open and closed funds existing. The state provides an annual subsidy of up to HRK 1,250 and allows a deduction of up to HRK 1,050 per month from personal taxable income. Voluntary pension funds must have at least 2,000 members two years after its establishment. Benefits are paid as annuities or as periodic payments. Member may not withdraw their benefits until they reach the age of 50. In December 2006, 1,3m people were members of voluntary pension funds.

Approach to Risk-based Supervision

Supervision of pension funds has recently been taken over by HANFA, the newly integrated Croatian Financial Services Supervisory Agency. Since its introduction, the new pension system has been supervised according to a ‘rules-based’ approach – which has provided members of pension funds with a reasonably level of security. The supervisory agency performs extensive daily supervision of all pension funds’ activities (transactions, contributions, transfers etc.) as well as scheduled and spot on-site inspections. The focus is on legal compliance and all pension funds have the same level of scrutiny. Quantitative investment restrictions also mean that investment risk is not an issue for the supervisor. Although pension fund management companies are not required to maintain any risk-management tools, they normally have sophisticated risk-management systems already in place, being experience financial institutions (predominantly banks).

HANFA is now looking to move to a risk-based supervisory approach partly to use its resources more efficiently and also to come in line with developing European and international best practice. HANFA will also deregulate quantitative investment limits as their risk-based approach to supervision is rolled out, handing over more risk-management responsibility to the pension funds themselves. Although the rules-based

supervisory system is able to cope with the current pension market in Croatia (which consist of only 4 pension companies managing 10 pension funds), HANFA believe that the move to a risk-based approach ahead of the deregulation of products and markets will also allow them to cope with expected future growth in the pensions industry.

HANFA have already assimilated some risk-based techniques into their current processes. For example, the 5 main features of a rigorous process of supervision, as defined by the Basel II accord dealing with the banking sector, are already implanted by the supervisory authority:

- *Board and senior management oversight* - Refers to the following of the corporate governance process and the compliance with the Law in this area. This is regular procedure in conducting On-Site inspections;
- *Sound capital assessment* – Pension Companies are obliged to maintain minimum level of capital. Compliance in this area is continually examined by the supervisor.
- *Monitoring and reporting* – Supervision continually monitors pension funds' operations (daily reporting is used); Pension Companies are obliged to submit reports for pension funds on daily bases. They are also requested to submit regular reports for their operations as legal entity.
- *Internal Control review* – Assessment of the system of internal control is a regular practice during course of on-site supervision.
- *Comprehensive assessment of the risks* – This is actually an area which has to be developed in the future if risk based approach is going to be accepted. This activity will provide red flags for addressing institutions and areas which are on exposure to significant risks (which are not mitigated with appropriate controls). Supervision attention and resources will be directed towards this institutions, instead of allocation of resources on proportional basis to all institutions involved in the system.

HANFA do, however, foresee the need for restructuring in order to adopt a risk-based approach. Two major areas of adjustment are highlighted: changes in regulation and changes in supervisory methods. In terms of regulation, HANFA believe the following rules and regulations will need to be adopted or introduced:

- Implementation and maintenance of minimum requirements for risk management system by the pension companies;
  - i. *Risk models that have to be used by pension companies for assessment and quantification of the risk exposures;*
  - ii. *Measurement of the volatility of the portfolio (beta coefficient);*
  - iii. *Stress testing reports prepared by the pension companies, in order to measure impact of any changes to the portfolio (for example Monte Carlo simulation);*
  - iv. *Assessment of model risk (risk where a financial model used to measure market risks or value transactions does not perform the tasks or capture the risks it was designed to. Models for quantification of the risks usually simplify the real conditions and therefore risk of any discrepancies exist);*

v. *Periodical assessment of the different types of risks (financial, counterparty-default, market, country, political, etc) as well as bases used for particular assessment;*

vi. *Potential risk treatments (for example, risk avoidance, risk reduction, risk retention and risk transfer);*

vii. *Establishing of risk committee;*

viii. *Liability for notifying Agency in the special cases;*

iix. *Penalties for non compliance with the Law requirements.*

- More detailed regulation of the pension companies' corporate governance;
- Determining of minimum requirements referring to pension companies' internal control systems;

i. *Segregation of duties (for example division of the pension company organization on front, middle and back office);*

ii. *Four eye principle – (for example, no decision over certain amount can be brought by one person);*

iii. *Decision-making limits and authorizations;*

iv. *IT system security requirements;*

v. *Physical security of the documents, confidential information, systems etc;*

- Regulation of the relationship with the internal auditors;

i. *Effectiveness of the process for determining of issues/exceptions on a timely basis;*

ii. *Quality and experience of internal audit and compliance management and staff;*

iii. *Assessment of the internal control system;*

iv. *Necessary independence of the internal auditors.*

- Regulation of the relationship with the external auditor;
- Criteria for hiring of employees and staffing of the Agency (educational and professional requirements that have to be met by the employees);
- Code of Conduct for the employees in the pension companies;
- Internal regulations of the pension companies (by-law, policy, strategy, etc);
- Adjustment of the secondary regulation referring to supervision methodology;
- More liberal investment limits and rules, etc

In addition to these regulatory changes, the supervisory authority and the methodology it applies will also have to be updated. In addition articles in the law and the rulebook prescribing the supervisory methodology of the agency (off-site and on-site inspections etc.) will have to be adjusted to incorporate a new methodology for risk-based assessment. The methodology for assessing pension fund's risk management, corporate

governance process and internal control systems will need to be developed. Implementing the new methodology will also require the employment of new experienced staff as well as heavy investment in developing the skills of the current agency staff. This is currently the main barrier to the introduction of the new risk-based supervisory system.

III. Why is a risk-based approach to supervision being adopted?

As can be seen from the brief descriptions above, the pension systems in these IOPS members are very different, as is the structure of the supervisory authorities. Yet all are moving towards a risk based approach to supervision. The motivations for doing so are similar to those described by the 'pioneering countries' in the World Bank report:

Supervisory Structure	Supervisory Efficiency	Market Developments	Others
Change in the organization of regulatory agencies	Continuing attempts to resolve the mismatch between the large number of funds and the limited supply of supervisory resources (both people and powers)	A small number of failures among funds	Regulatory concern about incomplete compliance with conduct rules and poor governance practices, particularly among small and medium-sized funds
Move to integrated authority	Resource efficiency	Reaction to market corrections (and impact on pension funds) around the millennium	Way to improve internal risk-management and governance of pension funds themselves
Application of risk-based supervision to pensions as well as other financial sectors	Increase consistency of supervisory action	Low return environment	Coming into line with international best practice
	Proactive approach – dealing with problems before they arise	Avoid distortion of competition by applying equal rules for equal risks across financial sectors	
	Promote confidence in pension and financial system as a whole		

IV. What are the main problems which have been encountered in the introduction of risk-based supervision?

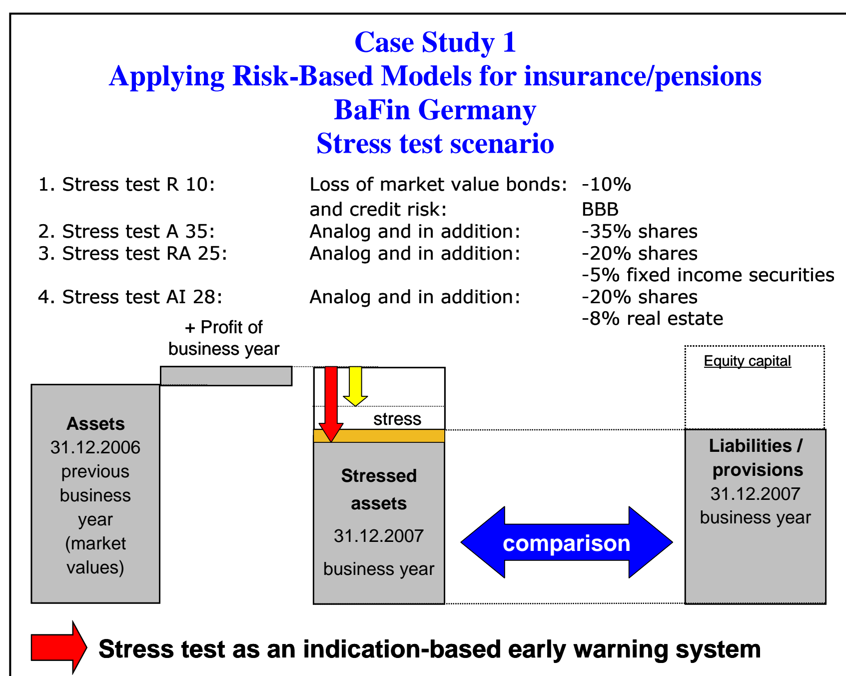
Some of the main challenges experienced by IOPS members in moving to a risk-based approach to supervision are outlined below:

i. *Adaptation of Models*

One of the first challenges faced by the IOPS members when beginning their move to a risk-based approach to supervision was how to use and adapt existing models and approaches from other countries and sectors, efficiently leveraging off experience rather than ‘reinventing the wheel’ and starting from scratch. A simple, but fundamental lesson learnt by all of the project team members is that one model or structure cannot be taken from another country and applied unaltered to another pension system. All countries are unique, with models requiring adaptation to each situation. The message from the project team is to look widely and decide what would be appropriate for the individual pension system before trying to adapt one model. For example, operational and legal risks are more challenging for developing countries (contagion/ counter party default risk etc.), which means they need to be built into their systems more robustly.

Trying to adapt an ‘intra-country’ model may be just as difficult, due to differences between sectors. For example, the Pensions Regulator (TRP) in the UK started by adapting an approach from the UK’s Financial Services Authority. However, it quickly became apparent that this would not work for TPR as it would not be practical to score each of the thousands of pension schemes in the UK individually.

BaFin in Germany had more successful experience in adapting the risk-based approach and stress test models which the integrated authority already applied in the banking and insurance sectors. Though not an exact 1:1 fit, the insurance ‘stress testing’ model works well for Pensionskassen and Direktversicherungen in Germany as these are treated as insurance companies, offering guarantees etc. and BaFin’s experience shows that insurance models can be successfully adapted for DB or ‘hybrid’ type pension schemes. One lesson which BaFin would pass on though is that the model, once built, should not be considered as fixed in stone. Having started their early warning system in 2001, BaFin are already on to the fourth generation of their stress testing model, which is updated for market and other developments approximately every two years.



One of the pioneers in risk-based supervision, Australia's APRA, experienced similar challenges when introducing their risk-based approach across a range of financial institutions. On top of the challenge of needing flexibility and time to adapt to the inevitable introducing problems, APRA also point out that even if the system is 'close to correct' time is still required to let it 'embed'. Regarding APRA's PAIRS system, they admit that the staff were fairly negative for the first six months, and it took a full 18 months or so to be accepted, and a full three years from introduction for modifications to be included. Apra's message is therefore think 'increment and evolution' – "get it as right as possible, give it time to embed and expect to have difficulty with this but also expect to make changes in the future." As with all the IOPS team members, APRA also faced the challenge of underestimating the amount of change needed within the supervisory agency to implement the move to risk-based supervision. One piece of advise from the Australian experience is to be clear regarding terminology and clarify what 'risk-based' actually means, whilst accepting that it implies and requires interpretation and qualitative judgements. Terminology should be clarified both inside and outside the agency. For example APRA found that "a number of jurisdictions seem to equate it to 'identify all possible risks and assessment of them all' *rather than* 'take a risk' by focussing only on the bigger/more important risks and consign the rest to 'second order' considerations."

Another risk-based supervision pioneer, CONSAR of Mexico, passed on similar messages regarding introducing a risk-based approach in an 'evolutionary' manner. As with APRA, CONSAR stress the need first to clarify what exactly is meant by risk-based supervision. For example, CONSAR highlight two different aspects - operational and financial (operational risk relating to millions of collection and distribution transactions in individual accounts, whilst financial risk involves asset management decisions being taken on behalf of individuals). Risk based tools have evolved gradually in Mexico. On the operational side, a score-card model has been recently implemented for the first time, as CONSAR understanding has increased over time so that they have been able to identify and concentrate regulatory efforts to the areas of operation where errors are most likely to occur. A focus on those parts of the processes more prone to be flawed has also permitted the supervisor to direct its off-site and on-site supervisory effort in a more efficient manner and to direct regulatory fine-tuning, as well as to create incentives for the pension fund managers to improve on those segments of their operations where the risk of error is larger. On the financial side the risk-based approach has allowed the regulation to move away from quantitative limits on asset allocation to limits on risk via the introduction of a 'VaR' approach (which is calculated everyday as part of the investment regime off-site supervision). This measurement has increased the pension industry's risk awareness and management and, CONSAR believe, shifted the risk-return efficiency frontier and created the incentives for better asset management in the industry (e.g. as a result of the regulatory changes made pension funds have diversified into equities and international assets).

One structural mistake which all project team members felt they made was rolling out their new system live to all funds at the same time. All agreed that running a 'pilot' project with a few funds - to test data collection and other administrative issues, as well as internal staff capability etc. – would have been extremely useful. APRA also suggest that an assessment should be made whether the system needs to be different for different categories/ classes of funds.

Suggestions:

- Look at a range of available models – consult widely and adapt carefully;
- Consider adapting models created for the insurance sector for pension funds with guarantees;
- Allow flexibility when applying a standardized model to various financial products;
- Built in flexibility to upgrade models and systems on a regular basis;
- Use pilot schemes and avoid a 'big bang' roll out across the entire pension industry at the same time.

ii. Reorganisation of Supervisory Authority

Having decided on the basic approach to risk-based supervision, the project team also found the process of designing the structure of the supervisory authority to implement this approach a major challenge. Indeed team members stressed that the amount of change required by their organizations in adopting this new approach could not be over-estimated, and one message that can be passed on to other IOPS members is to allow plenty of time and flexibility to cope with such change. For example, TPR's initial organizational design required significant modification with experience and as the understanding of what a risk-based approach really meant. It also became clear that, to be manageable, the reorganization had to be phased with different parts of the organization transitioning at different times over a two year period.

In terms of the actual structure of the organization, different solutions were naturally found by the different authorities according to the nature of the pension system and entities they are supervising. For example, given the integrated nature of the authority, the German supervisor BaFin introduced a combination of both specialist pension and cross-divisional groups. Given the increasing importance of occupational pensions (making effective supervision ever more necessary), BaFin created a dedicated department for the operative supervision of Pensionskassen and Pensionsfonds and boosted its staffing level considerably. However, the integrated authority has also been able to make great use of internal expertise within the organization, coming from the earlier adopting of risk-based models in the banking and insurance sectors. The cross-sectoral risk modeling group ('QRM Group') was therefore set up to conduct non-directorate specific evaluations of the quantitative methods used for risk assessment. BaFin stress that, although there are differences between products, risk-based supervision for any sector involves modeling and common actuarial etc. skills which can be leveraged by using a central group. In addition a manager for the SRP ('Supervisory Review Process') was introduced for the insurance pillar and a Centre of Competence for Capital Investment was set up (responsible for the centralized audit of complex, high-risk, traditional investments and financial innovations).

Meanwhile the Financial Services Board in South Africa has kept supervision and compliance divisions separate, with a Head of Department to manage each[2]. Although a

2. The '*IOPS Principles of Private Pension Supervision'* recommend assessment and sanction imposing divisions within the supervisory authority and that the authority should have its own governance code:

general model for risk-based supervision has been adopted for the FSB as a whole, each department has been given the freedom to implement risk-based supervision in a manner that best suits the department's circumstances provided there is a broad adherence to the general model. With the introduction of Risk Based Supervision, it was recognised that the prevailing departmental structures would require restructuring, to create a specialist division. Accordingly the Pensions department was split into four sections: Licensing and Registration, Prudential, Risk Based Supervision and Enforcement, and Research and Policy. Four different heads were appointed to manage the four divisions under the control of the Deputy Executive Officer, as outlined below.

As in South Africa, the Financial Services Authority in Kenya also organizes the authority to produce one risk score. Alternatively, TPR in the UK does not apply a single risk score to the funds it supervises (largely due to the practical constraint of such large numbers), and rather considers three different types of risk which are managed through different parts for the agency (scheme specific funding, corporate risk management, pension administration and governance). In addition the 'triage' unit uses judgment, supported by analytical tools, to assess all potentially high risk cases referred to it by the customer support department, including priority and type of response. It may also initiate proactive consideration of high-risk schemes based on intelligence gathering and analysis. TPR has also introduced a 'environmental scanning' team, which analyses more general risks across schemes or within specific sectors, gathering data about subjects such as trends in pension provision and the risks facing defined contribution and closed schemes. In relation to its new clearance powers[3], a clearance team has been established as part of the Corporate Risk Management practice. This is a multi-disciplinary team, including lawyers, business analysts, actuaries and case managers as well as pension specialists. As with many of the regulators teams, regulatory staff are mixed with individuals on secondment from (amongst others) legal and accountancy firms, investment banks and insolvency specialists.

Principle 10 Governance: *The supervisory authority should adhere to its own governance code and should be accountable*

10.1 The pension supervisory authority should establish and adhere to a governance code, outlining suitable internal controls, checks and balances, and effective processes for risk and performance management. A code of conduct should be established and enforced in relation to all staff members.

10.2 There should be clearly documented procedures for decision-making, with processes for referring decisions up to the appropriate level of seniority, reviewing and documenting decisions.

10.3 For interventions with serious impact there should be some separation between those within the authority proposing interventions and those taking the final decision, so the scope for emergency action is balanced by a review process.

10.4 Pension supervisory authorities should be clearly accountable for their general conduct and activity. Pension supervisory authorities should have accountability arrangements, which may vary according to specific country circumstances and which may include accountability to a range of bodies, from parliament to the members and beneficiaries of pension funds or plans.

10.5 Procedures should be in place for the governing body of a pension plan or fund to appeal to the pension supervisory authority or relevant tribunal for decisions taken by the pension supervisory authority that affect them and which they consider inconsistent with legal provisions.

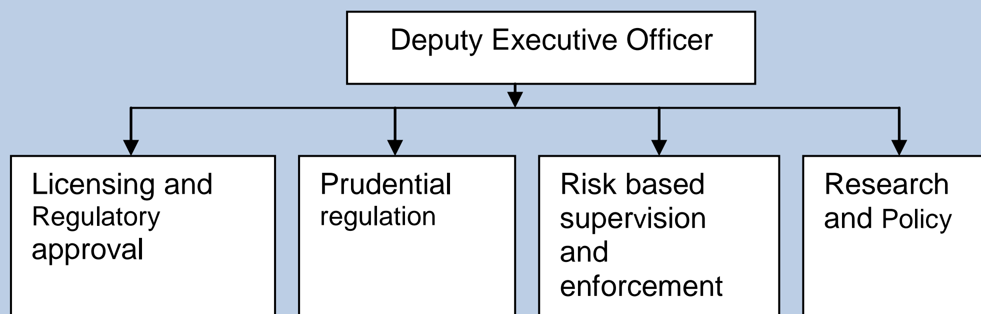
3. Companies with underfunded pension schemes which are considering corporate transactions can now apply (on a voluntary basis) to the Pensions Regulator for a clearance statement. This gives assurance that the transaction does not contravene anti-avoidance legislation and that the regulator will not use its anti-avoidance powers (i.e. seeking further contributions for the pension scheme) once the transaction has been completed. During its first year of operation, TPR received applications for over 200 clearance statements, refusing only 2.

Case Study 2
Organisation of Supervisory Authority
Financial Services Authority, South Africa

Structure:

With the introduction of Risk Based Supervision, it was recognised that the prevailing departmental structures would require re structure, to create a specialist division. Accordingly the Pensions department was split into four sections: Licensing and Registration, Prudential, Risk Based Supervision and Enforcement, and Research and Policy. Four different heads were appointed to manage the four divisions under the control of the Deputy Executive Officer - as outlined below – in which:

- Licensing and regulatory approval' deals with the registering of new funds including the approval of rules, approving amendments to rules, and licensing.
- Prudential regulation' scrutinises financial statements and returns filed with the regulator (and would handle all actuarial valuations and transfers between funds if these were not handled by the actuarial department) and liquidations.
- Risk based supervision and enforcement' is responsible for risk-based supervision and all complaint handling, and regulatory intervention.
- Legal and policy' provide research and legal support to the department.



Some team members suggested that it may be easier to introduce the new risk-based approach to supervision at the same time as broader pension reform – which was done deliberately in Kenya and in the UK. Indeed if the two do not go together there can be problems. For example, the Retirement Benefits Authority in Kenya have found that they do not have all the necessary powers to enforce their new risk-based approach and therefore new legislation will be required, causing delays. However, other authorities, such as the Financial Services Board in South Africa, have taken a more pragmatic approach. Though they would like to have introduced their new supervisory approach at the same time as the country's pension system reforms, the decision was taken not to wait what could be several years but to go ahead and roll out the new risk-based supervisory approach.

The Croatian supervisory authority, HANFA, is an interesting example of an authority which will have to introduce new primary legislation, secondary legislation and guidelines as it rolls out its risk-based supervisory method. Quantitative investment restrictions will be deregulated as risk-based supervision is rolled out, and HANFA will

be helped by the fact that the pension funds in their country already having risk management systems in place which go far beyond current regulatory requirements. HANFA's have been moving in steps and adopting some risk-based methodology into the existing rules-based supervisory system.

The supervisory authorities which are leading proponents of risk-based supervision have also undergone reorganization, to reflect the new functions undertaken and skills required. In Australia, Denmark and the Netherlands there are units focused on the relationship with the institutions and specialized units providing expert/ technical support on different types of risks. The Mexican supervisory agency is organized to reflect the internal risk-management architecture imposed by regulation.

- ***Netherlands****:* Central Bank with specialized pension units and specialized ALM and legal units. Supervision is organized around several operating directors aligned with types of institution (such as conglomerates, banks, insurance, and pension funds). Each division is supported by a supervisory policy division (with responsibilities across all types of institution) and by centers of expertise in areas such as ALM. The Central Bank's risk scoring model was developed by representatives from all supervisory divisions (but is 'owned' by a director from one division). An expert team with representatives from all operational divisions is responsible for updating the model as required.

- ***Denmark:*** Integrated agency with specialized pension units and specialized risk units. Major industries are supervised in different divisions, with the Life and Pensions Division one of 10 responsible for supervision and regulatory techniques. Staff from this division undertake off-site monitoring and on-site inspections. This division was also responsible for the introduction of the 'traffic light' stress test, with close collaboration with experts from the Banking Division.

- ***Australia****:* Integrated agency with lead supervisors and risk specialists. Staff responsible for the supervision of superannuation funds work in different divisions, including 'front-line' supervision divisions, the Diversified Institutions Division (responsible for financial conglomerates) and the Specialized Institutions Division. Staff can have responsibility for several different types of financial institution. Supervisory analysts are supported by specialists in credit, market and operational risk and actuarial support is also available. A group within the Policy and Research Division provides technical support for the risk-scoring model and collects data or risk ratings which are then transmitted to management and executive teams.

- ***Mexico****:* Specialist agency with specialized operational and financial risk units under 2 separate Vice Presidents (with separate areas responsible for supervision activities under the financial division). CONSAR has been building up its technical capabilities to assess the impact of VaR models and enable assessment of the risk management practices within pension funds management companies.

Suggestions:

- 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 risk-based methodology into existing rules-based systems;
- 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:
  - cross-sectoral evaluation
  - separate departments analyzing and leading interventions on different risk categories.

iii. Data Collection

Probably the biggest – unexpected – challenge encountered by the IOPS members when moving to a risk-based approach to supervision in the pension area was the issue of data collection. This proved to be a particular challenge not only in countries with developing pension industries, such as Kenya, where data is often not available, but also in highly developed pension systems, such as the UK, where the large number of pension funds is the major challenge.

Though their experiences, the IOPS project team would recommend that other members think hard about the data they have and the data they need in advance of launching the transition to a risk-based approach. The team highlight that the importance of this issue cannot be stressed too highly or be placed high enough up the agenda - it is no use building perfect (theoretical) systems if there is nothing to put in them and nothing to analyse. Given this is a particularly difficult challenge for more developing pension systems, the FSB in South Africa tried to work with existing data where possible in order to minimize costs. APRA in Australia also warn against the danger of over-collection of data for all funds, whatever size.

The Pension Regulator in the UK introduced their scheme return, data collection process in stages, initially dispatching scheme returns to the largest DB schemes and eventually to all DB schemes with 5 members or more within their first year of operation. The returns are now being rolled out to larger DC schemes, followed by smaller ones. The initial, lengthy paper return has been replaced with a more streamlined, on-line version, which is quicker to complete and allows possible errors or omissions to be identified immediately rather than picked up at a later stage. In addition to 'whistleblowing' reports, risk-related information is also collected via a new notifiable events framework. Almost 400 reports were collected in TPR's first year of operation, covering matters such as changes in senior personnel or advisors, decisions to relinquish control of sponsoring employers and significant transfers of scheme assets.

Ensuring suitable powers and persuasion to supply data (as discussed in section V) was seen by members as vital for ensuring the efficient working of the risk-based system. Fining may not be the only or the easiest answer. One solution is to build data collection

into the risk-based analysis, explaining that if the data collected is insufficient or late this will be taken into account when forming any risk-score or deciding the supervisory response towards the fund. Given that data collection is particularly onerous for smaller funds (in the UK, for example, some of the smaller funds complain that they need to hire consultants to help them supply the necessary data, which is naturally costly), more 'slim line' reporting requirements for smaller funds may be considered.

In order to speed the collection and simplify the analysis of data, international good practice suggests on-line responses from pension funds[4]. As this is clearly challenging for pension funds in more developing countries, the UK approach of requiring on-line responses unless there is a good explanation for not doing so may be one solution. The FSB in South Africa use a two part questionnaire, with an electronic platform for financial information. IT systems should also be considered to help set up earning warning as well as simply data collecting mechanisms.

A further lesson which was drawn from the IOPS IT Utilization project is that the quality of the data collected can be enhanced by improving supervised entities' understanding of the importance and usefulness of the data collection and by making sure there is a clear definition of every variable. It is also important to give feedback on joint information from the data collected. The goals sought from the data collection process should be communicated effectively among parties such as supervisory authority's departments, pension companies, pension funds and also the pension members.

Another issue faced by the project team was what to do with their data and analysis once collected? Should the supervisors' risk-ratings be published (publicity and reputational risk being a major incentive for funds to act and reduce their risk-rating themselves)? The FSB in South Africa, when considering this question, expressed concern that they would become another rating agency (and indeed could have an impact on the credit markets) – leading to appeals and disputes with pension funds. They have therefore decided to only differentiate between funds which are on their supervisory 'radar screen' where trustees are being asked to take action to mitigate risks, and funds which are not. Ratings will only be revealed to funds or administrators in the high-risk group and will be given the opportunity to challenge this rating. If other pension funds enquire as to their rating they will simply be told that they are not in this category. The RBA in Kenya also keep their ratings private, as do the TPR in the UK, though they admit that important decisions do tend to become known publicly. However, TPR does indicate that the publication of aggregate information on risk can be used to influence the understanding and behaviour of regulated entities. For example, their 'Purple Book' (published jointly with the Pension Protection Fund) sets out analyses from TPR's scheme return in combination with available data as they related to the prudential risks to DB schemes. The advice from the project team is therefore to keep ratings private, certainly whist the risk-based system is in the start up phase. Supervisory authorities may wish to release the ratings in future, but would need to do so carefully.

Suggestions:

- Make sure data collection is given proper place in the planning process when devising a risk-based supervisory approach;

4. For further details of international good practice regarding IT see IOPS paper, '*Utilisation of IT technology in off-site supervision*'

- Use existing data where possible to minimize 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.

iv. Staff

Probably the biggest challenge faced by the IOPS project team members was achieving the right staffing for the new risk-based approach. Given risk-based supervision requires a different approach to compliance based supervision – moving from 'box-ticking' to making qualitative judgments – the supervisory authorities found themselves with staff who did not necessarily have the right set of skills. A 'upgrading' of staff was therefore required, getting them to adopt a 'pro-active' stance.

The Croatian supervisory authority, HANFA, sees staff management as the major challenge in moving to a new risk-based supervisory approach and envisages costs to not only hire new staff but also to significantly retrain new employees. This is particularly challenging in a country such as Croatia with a growing financial services industry which is already attracting away many supervisory staff members.

The authorities therefore stressed that it is important that training be undertaken by ***all*** staff. This was undertaken internally by the FSB in South Africa and the TPR in the UK. Meanwhile in Kenya the RBA worked with the World Bank and had internationally expert assistance with training. The key to this training was not only allowing staff to acquire new practical skills needed, but initially to educate them as to what risk-based supervision involved, so that all members of the authority were 'on board' and understood the goal the authority is trying to achieve – which is vital as staff move from 'box ticking' to making qualitative judgments. All the authorities felt it was necessary to get a 'buy in' from their staff to make the new approach successful. The project team also stressed again how much change is involved in moving to the new risk-based supervisory approach, and that basic staff management should not be overlooked. Most people do not like change and find the idea of not knowing what their role will be, which team they will be working in or who their manager will be in the months ahead daunting. Basic management skills should not be overlooked in the face of broader structural change. In addition the FSB in South Africa worked hard to rearrange existing staff in order to help minimize costs.

In addition to training all staff, another approach, adopted by Kenya, was to appoint 'lead teams' to drive the reform process forward.

Case Study 3
Internal Communications
Retirement Benefits Authority, Kenya

Initial Introduction:

- All technical staff of the Authority were introduced to the concept of risk based supervision at a supervisory skill retreat held in conjunction with the World Bank.
- The concepts and reports from the retreat were discussed extensively by the management and a resolution taken to introduce risk based supervision for the industry.
- This was communicated to the technical departments of the Authority and an inter-departmental project team was set up. (Risk Based Committee)

Second Phase:

- The project team started preparing research and development of the Authority's risk based supervision model under a work plan.
- The project team reported on progress to the management through a management representative – the Head of Compliance Department.
- Two (2) day training carried out for all technical officers of the Authority, this time solely dedicated to risk based supervision. This was facilitated by the World Bank and included country specific studies.
- During the same training, the Chief Executive Officer and Management reiterated their commitment to risk based supervision
- The risk based committee also had the opportunity during the training to report on progress and receive reactions from the technical staff.
- This was targeted at achieving buy in from the staff on the supervisory model and to keep the staff up-dated on the progress toward implementation, including challenges that may be faced.
- Initial report and manuals disseminated to the key departments in the Authority – Compliance and Research & Development.

The Next Phase:

- The Authority is yet to carry out intensive training on the particular model being developed for adequate implementation.

BaFin in German y were able to leverage internal expertise to provide training for staff members. For example, the internal QRM, risk-modeling group give lectures

updating staff on modeling techniques learnt from their banking experience. BaFin, however, also stressed that training needs to cover ‘philosophical’ issues as well as specific technical skills. Staff need to understand that a risk-based approach focuses on forecasting, and that simply basing responses to past data is not enough. Staff also need to be trained how to use stress-testing models and what they are for. BaFin make it clear that stress-testing models are only one tool in the supervisor’s armory and should not be used ‘automatically’ – with the modeling saying X resulting in response Y, which may not be appropriate. Though efficient, these models might throw out strange results and staff need the skills to interpret these results and understand why they may have occurred. In addition BaFin stress that training should be on-going as staff need to keep up with developments in order to be able to discuss with industry participants etc.

However, the project team also pointed out that retraining can work only up to a point, as existing staff may not always be the ‘perfect fit’. It may be necessary to hire some new staff with experience of this type of approach (e.g. accountants who are more familiar with risk analysis). Secondments may also add value by bringing in new skills, such as financial analysis, commercial law etc.

It is not only the staff within the supervisory authority which need to adapt to the new risk-based supervisory approach. Trustees may also be required to take on new roles and responsibilities and may need assistance from the supervisor to meet this challenge. The RBA in Kenya, for example, noted a lack of functioning trustees as a hurdle to applying a risk-based supervisory approach. TPR has done extensive work in this area, providing on-line tools for assisting, guiding and training trustees[5].

Suggestions:

- 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 minimize costs;
- Use international expertise / ask for international training assistance;
- Hire or second some experts from ‘risk-aware’ sectors in the 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.

5. For further information on TPR’s ‘Trustee Toolkit’ see http://www.trusteetoolkit.com/arena/index.cfm

v. *Industry*

A further challenge, which the IOPS project team felt they handled with differing degrees of success, was communicating the new supervisory approach with the pension industry, external stakeholders (such as accountants) and with the funds and entities being supervised. External communication was felt to be just as important as internal communication in the process of moving towards a risk-based approach to supervision. Again, getting the pension industry to understand the philosophy of the risk-based approach is key, as the ultimate goal is to imbue a risk culture into the pension funds themselves, with the pension funds performing their own risk controls and monitoring, so that the supervisory authority only has to step in where necessary. Explaining the new system to a wide range of stakeholders is therefore key. The RBA in Kenya noted a resistance to change by stakeholders as a major hurdle to overcome when rolling out their new risk-based supervisory approach - including some doubting the independence of the whole exercise, and members and beneficiaries being concerned that they will have to bear the costs of the new supervisory system. A similar concern was expressed in South Africa where funds have been reluctant to fill in the new electronic forms. Reliability was also a concern as inevitably there is subjectivity built into the process.

The Pensions Regulator in the UK sees the process by which they introduced risk-based supervision as a good example of well–handled, external communications. When introducing their new approach to scheme funding, and to help change the attitudes of trustees and their advisors, TRP released their initial proposals in a discussion format, explaining what the regulator was thinking of doing, outlining the potential risks and asking for feedback. Informal talks were held with a wide range of stakeholders and their comments were taken on board, so that when the final document was released there was widespread agreement and support. Other techniques used by TPR to communicate successfully with the pension industry include using secondees from pension funds, who spend some time working with the supervisory authority before going back to their firms, which helps spreads knowledge of the new approach through industry (how the process works, what is expected of firms etc.)[6] . TRP also worked closely with the actuarial community in the UK, an influential group within the pension industry with the potential to be powerful allies. TPR sent staff to actuarial meetings, explaining the new process and receiving feedback.

Much of the work of the TPR during its first year of operation has been supporting, informing and educating the regulated community, driven by both legislative requirements and the regulator's new proactive approach. The 2004 Pensions Act required TRP to produce codes of conduct on a range of subjects which were produced via a process of consultation. These provide practical guidelines to relevant parties (trustees, advisers, administrators, employers etc.) on complying with relevant pension legislation and setting out in plain language the standards that are expected of them. Topics covered include reporting breaches of the law, notifiable events, and scheme funding (explaining the roles and duties of trustees, actuaries and sponsoring employees in implementing the new funding requirements). In addition to these codes, guidance and

---

6. The IOPS Principles note that transfers between the supervisory authority and industry should be handled carefully:

Principle 8: Confidentiality - *Pension supervisory authorities should treat confidential information appropriately*

8.5 Where staff transfer between the supervisory authority and the private sector, mechanisms should exist to ensure against the disclosure of confidential information.

8.6 Third parties to whom the pension supervisory authority has outsourced supervisory tasks should be subject to the same confidentiality requirements as the staff of the pension supervisory authority itself.

updates were produced on topics such as clearance (of corporate transactions which may affect the pension scheme) or operating cross-border within the European Union, general guidance for trustees and information for scheme members on annuity options available to them when they retire. The regulator has found that the codes and guidance section is consistently the most visited area of their website accounting for around one in eight hits. To provide additional support for trustees (and to help them meet their new knowledge and understanding requirements), a free on-line training programme, known as the 'Trustee Toolkit'[7] has been developed. Consultation and contact with the pensions community has been a defining feature of TPR's first year of operation, and is envisaged to continue to play a key role in future years. The regulator stresses that risk-based supervision can only work with the cooperation of the regulated community and that the responsibility for ensuring compliance must be shared through constant dialogue with those who manage, advice on and administer pension funds.

The Financial Services Board in South Africa also undertook a widespread communications campaign when introducing their risk-based supervisory approach. FSB has had to struggle with the challenge of dealing with large numbers of retirement funds. However, there are a relatively small number of specialist administrators and service providers that administer or advise large numbers of retirement funds (and the high level of outsourcing means that it is at this administrator level where some of the major risks will manifest themselves). Close relationships with these service providers will enable the FSB to identify industry-wide problems and trends. The FSB also works with their Pensions Advisory Committee consisting of representatives from all stakeholders, which supplies feedback on the actions of the regulator. In addition the FSB worked closely with the powerful pension industry body, running road-shows around the country to increase awareness. However, one point the FSB also stress is that on-going communication is just as important as the initial promoting of the reforms. After the introducing of the RBS process, the FSB found that pension funds did not necessarily understand how the supervisory authority would interact with them under the new regime. Having supplied their data and filled in the questionnaires they did not understand why the authority was then coming back to them and asking further questions! A similar reaction was found by the Retirement Benefits Authority in Kenya after funds were registered. Clearly the supervisory authority needs to go back to the funds and check that they are doing what they claim in their registration submission, but this needs to be explained. The supervisory authority needs to make sure that their on-going relationship with pension funds is as well understood as the reporting requirements under the new regime.

Although the German regulator, BaFin's approach to risk-based approach required Pensionskassen and Direktversicherungen to run 'internal stress-tests' on their portfolios at least four times a year (notifying the supervisory authority of the results at least once, more often if they are out of accepted ranges), industry participants have not found this requirement particularly burdensome. BaFin conduct regular meetings with industry and have used their feedback to adapt and improve the risk-based models. One key partner who BaFin stress it is important to also have regular communication with is the pension regulatory and policy body (the Ministry of Labour and Social Affairs in Germany) as the interaction between regulation and the supervisory approach needs to be understood on all sides.

7. For further details see www.trusteetoolkit.com

APRA in Australia, one of the pioneers of risk-based supervision, also have lessons regarding dealing with industry and other stakeholders. APRA stress that it is very important to be very clear about what data the supervisory authority wants, why they want it and how they are going to use it. If this can be explained then stakeholder acceptance (even if this does not turn into agreement) will be more likely. APRA stress that it will be impossible to "win all hearts and minds", but if the supervisory approach is not properly explained then implementation may be much harder. They suggest that information sessions for Boards rather than 'only' industry per se should also be considered (depending on the structure of the industry etc). APRA found that their PAIRS/ SOARS system obtained much more acceptance in regulated entities (particularly large ones) after supervisory staff attended Board meetings to explain what it is, how it is used, and what it means for the regulated entity. TRP has similar experiences, finding value in achieving two-way communication by ongoing practical 'roadshow' workshops for trustees and their advisors on the new approach to DB scheme funding.

Another of the risk-based pioneers, CONSAR in Mexico, has interacted with industry in an interesting way. Their risk-based architecture has relied on the creation of internal risk committees, which force the pension fund managers to measure risks and to seek ways to reduce them – i.e. the pension funds themselves have internally adopted a risk-based approach to their operations. The prompt adoption of the risk committees has been rewarded by CONSAR with a slight reduction in the capital reserve requirements that pension managers must maintain.

One further suggestion from the project team when working with other stakeholders who will play an important part in making the risk-based approach to supervision a success is to clearly outline the role of 'whistleblowers' (auditors, actuaries, trustees etc.) – who pick up potential problems before they occur. However, as well as informing them what the supervisor needs to know, it is just as important to tell them what the supervisory authority ***does not*** want to know, to avoid being swamped with unnecessary information and warnings. TRP has published a code of practice and associated guidance that explains the types of legal breaches it does and does not expect to be reported, using a 'traffic light' approach. 'Red' risks are events that represent a significant or immediate threat to members' benefits, such as fraud or serious maladministration, and should be reported. 'Green' risks, commonly one-off and remedial breaches without serious impacts, should not be reported. 'Amber' risks are events whose seriousness is circumstance-specific, taking account, for instance, of whether the breach is a one-off or reflects a deep-seated weakness.

As well as external communication with industry, communication with the broader public regarding the new approach to pension supervision is also vital. Although risk-based supervision adopts a pro-active, preventative approach, it needs to be made clear that no supervisory system will be able to cover all risks and that problems and failures will occur. The Pensions Regulator in the UK has been very clear, stating that risk-based supervision cannot cover all risks – indeed it would not be desirable to do so as the regulatory burden would be too high - and that the TRP cannot supervise all schemes in detail, but has a process for choosing which pension funds to cover (and offers education and guidance to all schemes). Meanwhile, the Retirement Benefits Authority outlines on their website what they do ***not*** do. Communication with the public is vital, as members of small pension fund in relation to which the supervisor has been adopting a light approach may experience losses. The risk-based supervision systems around the world are all new, and therefore reaction to such losses has not yet been experienced, but setting up the

communication and understanding amongst populations will be vitally important to the sustainability of such risk-based supervisory systems over the long-term.

Suggestions:

- 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);
- Communicate with the public to avoid major repercussions when future problems occur.

vi. Powers

One issue which arose for several authorities was the discovery that they did not necessarily have the powers to back up their new approach. For example, the RBA in Kenya found that they need to change legislation to allow for RBS and this is naturally a constraint on the adoption of the risk-based supervisory approach. In the detailed case study, it was noted that the FSB in South Africa is somewhat hamstrung at the moment in that if a fund if not prepared to take remedial action the supervisor can only intervene via the Courts and only under certain circumstances. The supervisor can, however, require more frequent reporting and may specify the information which is required from such reports. CONSAR in Mexico similarly stress that "containing risks in the pension system in an efficient manner implies a broad risk architecture, which includes both risk-based regulation and risk-based supervision tools."

The Pensions Regulator in the UK is an interesting case in terms of powers, which were significantly altered from those of the previous regulator when TRP was set up in 2005. The new regulator was launched as a proactive, risk-based organization from the start, and was given a broad range of preventative and remedial reactions which can be taken in response to potential risks – from issuing improvement notices to civil penalties or prosecuting offenses in court. It should be noted that the powers of TRP are framed to allow for a proportionate response. However, TRP stresses that they will always try to

achieve their objectives through education, advise and negotiation and that they have no wish to increase the regulatory burden on pension schemes.

As discussed in Section II, having the necessary powers to obtain data and make other requirements from funds is important, but sanctions and fines are not always the most effective means. Carrots should be used as well as sticks. Persuasion and incorporating data response into the risk-based analysis may be more effective. One problem with fines is that non-compliance with supervisory requirements (such as late reporting) is frequently the fault of the pension fund administrator (who is usually not legal accountable – this being the role of the trustees), rather than the fund itself, and certainly not due to the beneficiaries. However, fines imposed are usually on the fund, with the beneficiaries bearing the cost. Project team members therefore stressed that the role and responsibility of pension fund administrators need to be clarified as the new risk-based supervisory system is rolled out.

One alternative, considered by the FSB in South Africa (similar to that used by Pension Protection Fund in the UK) is to incentivize good management by gearing the service fee / levies to some extent to the riskiness of the fund – though this has not been worked out in detail as yet.

One way of persuading pension funds to adapt to the new risk-based supervisory approach is to communicate that if they do certain things the supervisor will not, or is less likely to visit them – always a good incentive for pension funds to act. The threat of action, or indeed avoidance of supervisory action, can be a powerful tool and can be more efficient (and cost effective) than using fines or other sanctions to bring pension funds into line with the new supervisory approach. However, care needs to be taken that this does not mean the system returns to being a 'box ticking', compliance style exercise.

Suggestions:

- Make sure the legal powers are in place to enforce the new risk-based supervisory system;
- Make sure the powers are flexible and framed in such as way as to allow for a proportionate response;
- Use persuasion / build non-compliance into risk-based score and supervisory response;
- Charge risk-based levies;
- Where fines / sanctions are imposed make sure these fall on the responsible parties (clarify role of the administrator) and do not harm pension beneficiaries unfairly;
- Explain what funds should do to avoid a heavy supervisory response in order to build a culture of compliance.