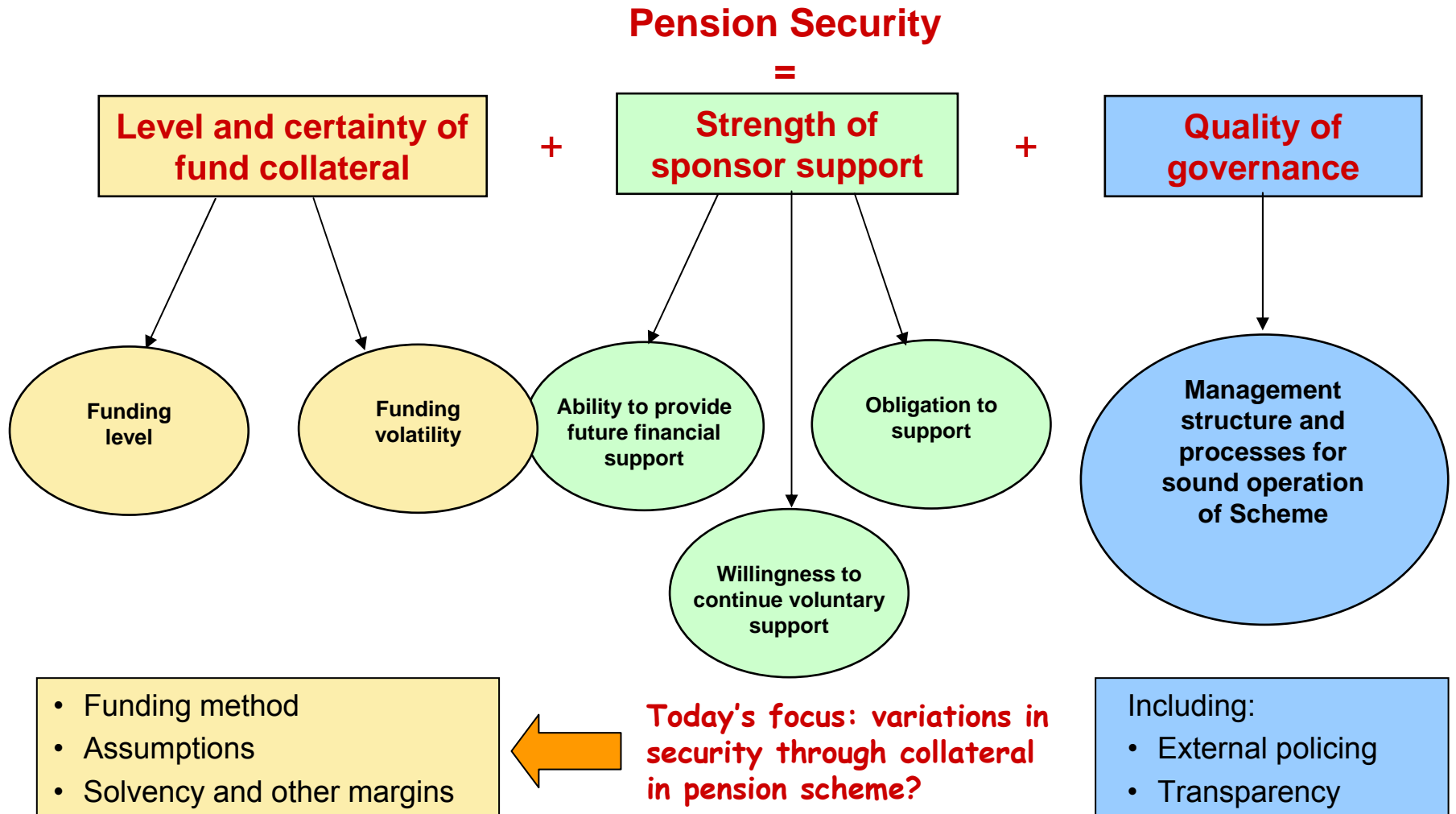


Security in pension provision

The role of the funding method and assumptions in providing pension security, now and in future.

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Main purposes of a valuation

	Funding	Accounting	Discontinuance	Statutory Compliance
Purpose	Budgeting cash flows	Reporting liabilities in sponsor's accounts	Legal liability on plan termination	Tax / Supervision
Objectives	Smoothed contribution rates	Consistency and comparability between companies and transparent disclosure	What is the cost of 'walking away'?	Minimum/maximum funding; levies, etc
Practical application	<ul style="list-style-type: none"> Flexibility and judgment in setting discount rates How much risk is affordable and what is the expected return from actual asset portfolio? Subject to minimum requirements in some countries 	<ul style="list-style-type: none"> Method and assumptions largely prescribed (in most countries) Discount rate linked to bond or government yields Volatile results if actual investment policy involves equity (and similar) assets 	<ul style="list-style-type: none"> What would it cost to buy-out accrued liabilities with a third party? Usually an assessment at a yield below government bonds, and a conservative mortality assumption 	<ul style="list-style-type: none"> Methods and assumptions usually prescribed. Influenced by local practices and culture.

Methods for valuing assets

- **Market value** - Austria, Belgium, Netherlands (some funds), Norway (accounting purposes), Portugal, Spain, UK, Australia, NZ, Japan, US, Mexico
- **Discounted income value** - Cyprus, Ireland
- **Average market value** - Cyprus, Ireland, UK (not common), Canada, US
- **Book value** - Denmark, Finland, Germany, Japan

Technical provisions

Amount of the technical provision depends on:

- Actuarial funding method:
 - **Implicit liability definition**
 - **Member options and guarantees**
 - **Sponsor/trustee options**
- Economic assumptions
- Demographic assumptions
- Implicit or explicit solvency margins for risk, expenses etc

Actuarial Funding methods: Two main families

Security driven - benefit allocation

Maintain a target level of funding based on pre-defined benefit obligation:

- Current Unit Method (CUM)
- Projected Unit Method (PUM)

Contribution driven – cost allocation

Define certain level of contribution based on pre-defined benefit obligation:

- Entry Age Method (EA)
- Attained Age Method (AA)

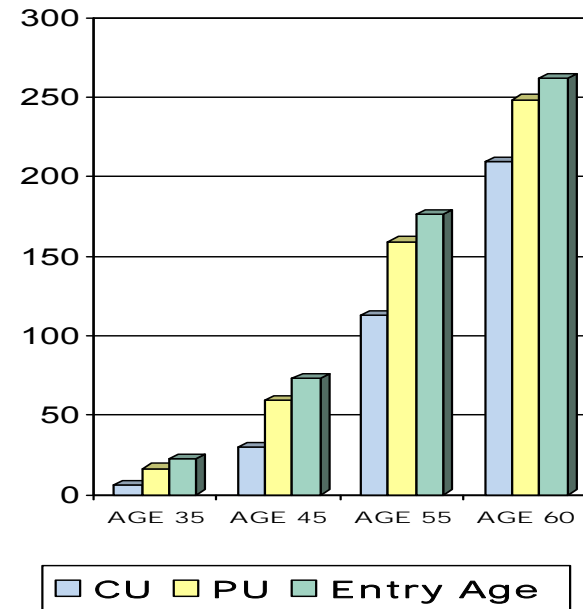
Principle: to fund for each employee's benefits whilst they are economically active.

Who uses which method?

- **Projected Unit**
Belgium, Cyprus, Germany (commercial accounting), Ireland, Netherlands (commercial accounting), Spain, UK, Australia, NZ, Japan, US, Canada, Turkey, Mexico, and for IAS/US GAAP
- **Current Unit**
Finland, Netherlands, Norway, Switzerland, Canada, Japan
- **Attained Age**
Austria, Germany (infrequent), Ireland (infrequent), Australia, Canada, NZ, US
- **Entry Age**
Germany and Austria (Infrequent), Australia, Canada, Japan

No country or geographical divide.

What's the difference?



At age 35, strongest method has a technical provision approximately 4 times the weakest; smaller differential at higher ages

Main economic assumptions : how decided and how different?

Three distinct approaches:

- Full prescription : usually where insurance tariffs apply.
- Flexibility within minimum and maximum limits set by supervisory or tax authorities (eg, US, UK, Belgium, Spain, Netherlands).
- Freedom of choice but with specific aims, eg all assumptions together to represent a best estimate for future (UK, Ireland, Australia, Canada, New Zealand). Often supplemented by actuarial professional guidance.

Typical real (net of inflation) discount rates for funding %	
US	4 to 5
Canada	1.5 to 5.5
Japan	3 to 4
Australia	4 to 6
New Zealand	2 to 3
Mexico	3.5 to 5.5
Turkey	5 to 10
UK	2 to 4

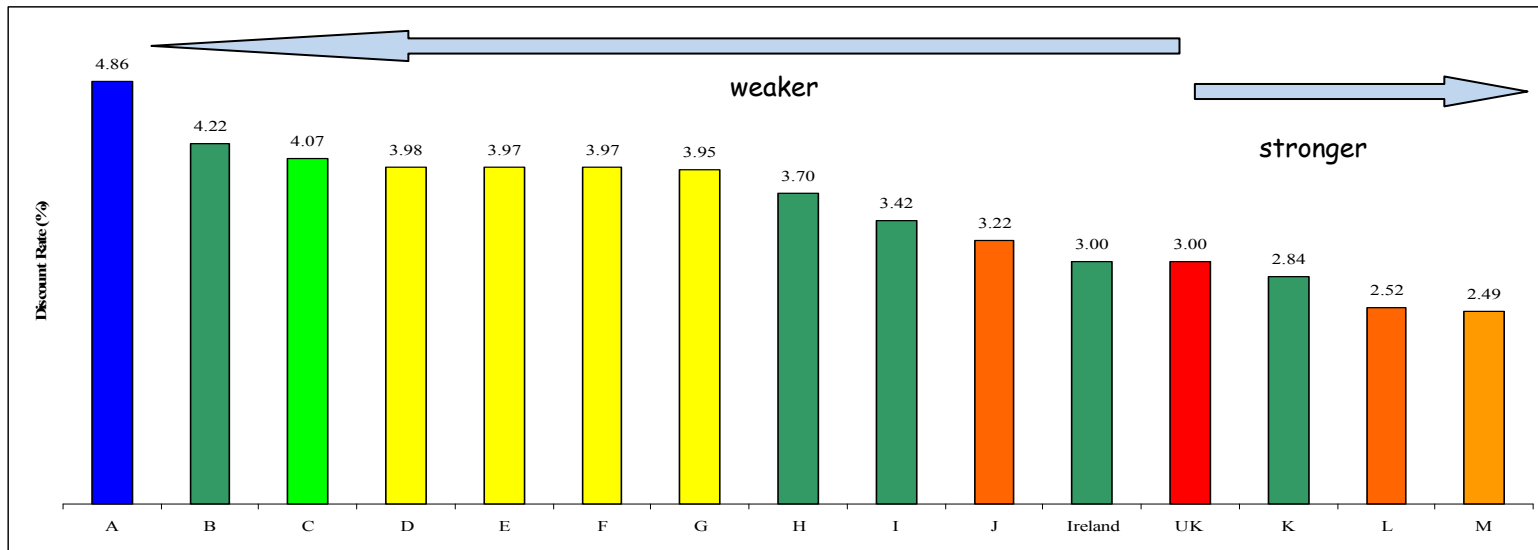
Actual net discount rates used will depend on plan design (salary related, price related, fixed, cash/annuity, discretionary benefits, etc) and asset valuation method

Demographic assumptions

- Practice ranges from:
 - complete set of demographic assumptions to use of mortality and retirement decrements only
 - using standard tables specified in regulations etc to complete freedom of choice for actuaries (eg, UK/Ireland)
- In most countries standard mortality tables developed either through population or other censuses are used; frequency of updates varies (10-15 years not uncommon)
- Future mortality improvements are allowed for in some countries but not in others; considerable uncertainty about what the level of future improvements should be

Mortality assumptions – how different?

City University research on international mortality comparisons



Discount rate compared to 3% for the UK, equivalent to change in mortality table (male age 65, includes reversionary widow's pension)

Many reasons why they should be different. More work needed on:-

- whether such big differences are justified;
- what is appropriate for future mortality improvements?

Funding: summary

Sources of variation in pension security

- Different approaches to valuation of assets
- Different actuarial funding methods, each leading to its own definition of technical provisions
- Different approaches to setting actuarial assumptions; different financial and demographic assumptions
- Different approaches to valuing options and allowing for risks.
- Different ways of allowing for prudence.

Will the IORP Directive affect funded pension security in Europe?

Main features of the of **minimum** solvency requirements:

- Sufficient technical reserves to protect members and beneficiaries
- Under funding permitted, subject to recovery plans (except for cross border arrangements)
- Member states have freedom to determine their own pension system structure

How prescriptive is the IORP Directive on funding methods and assumptions?

- Minimum Technical Provisions must cover:
 - Benefits in payment;
 - Members' accrued pension rights; and
 - Any other guarantees

No explicit definition of technical provisions or accrued rights

- Assumptions and Method
 - Prudent assumptions and method recognised by competent authorities

National governments to decide

- Assumptions:
 - *Economic*: Discount rates based on actual assets holdings and expected future returns OR the market yield on high-quality corporate or government bonds
 - *Demographic*: Based on the plan membership and risk characteristics

Some markers on what is expected

Monitoring convergence (Article 15(6)) ‘...with a view to further harmonisation ...in particular interest rates and other assumptions influencing the level of technical provisions The Commission shall propose any necessary measures to prevent possible distortions caused by different levels of interest rates

Groupe Consultatif surveys: principal observations
Funding methods (for minimum technical provisions)
Pre IORP Directive

- For final salary schemes, only Spain required minimum reserves to be set using the PBO method.
- All others required minimum reserves to cover at least the accrued liabilities, with adaptations to reflect social choices on indexation and other elements of preservation law.
- Differing practices regarding margins for prudence through:
 - Disregarding future withdrawals
 - Specific reserves for self insured risk benefits
 - Specific reserves for significant member controlled options
 - Reserves for expenses of winding up where these have to be met from scheme resources
 - Explicit solvency cushions

Groupe Consultatif survey: principal observations
Financial assumptions (for minimum technical provisions)
Pre IORP Directive

- Two distinct families:
 - Most countries prescribed fixed maximum discount rates. Range 2.75% - 6%
 - A full set of assumptions applied in Ireland, Spain, UK (narrower range of net discount rates)
- Only UK and Ireland linked the assumptions to prevailing market conditions, plus an indirect link in one other country through regulatory oversight.
- No requirement or practice pre IORP to link assumptions to actual asset or liability profiles

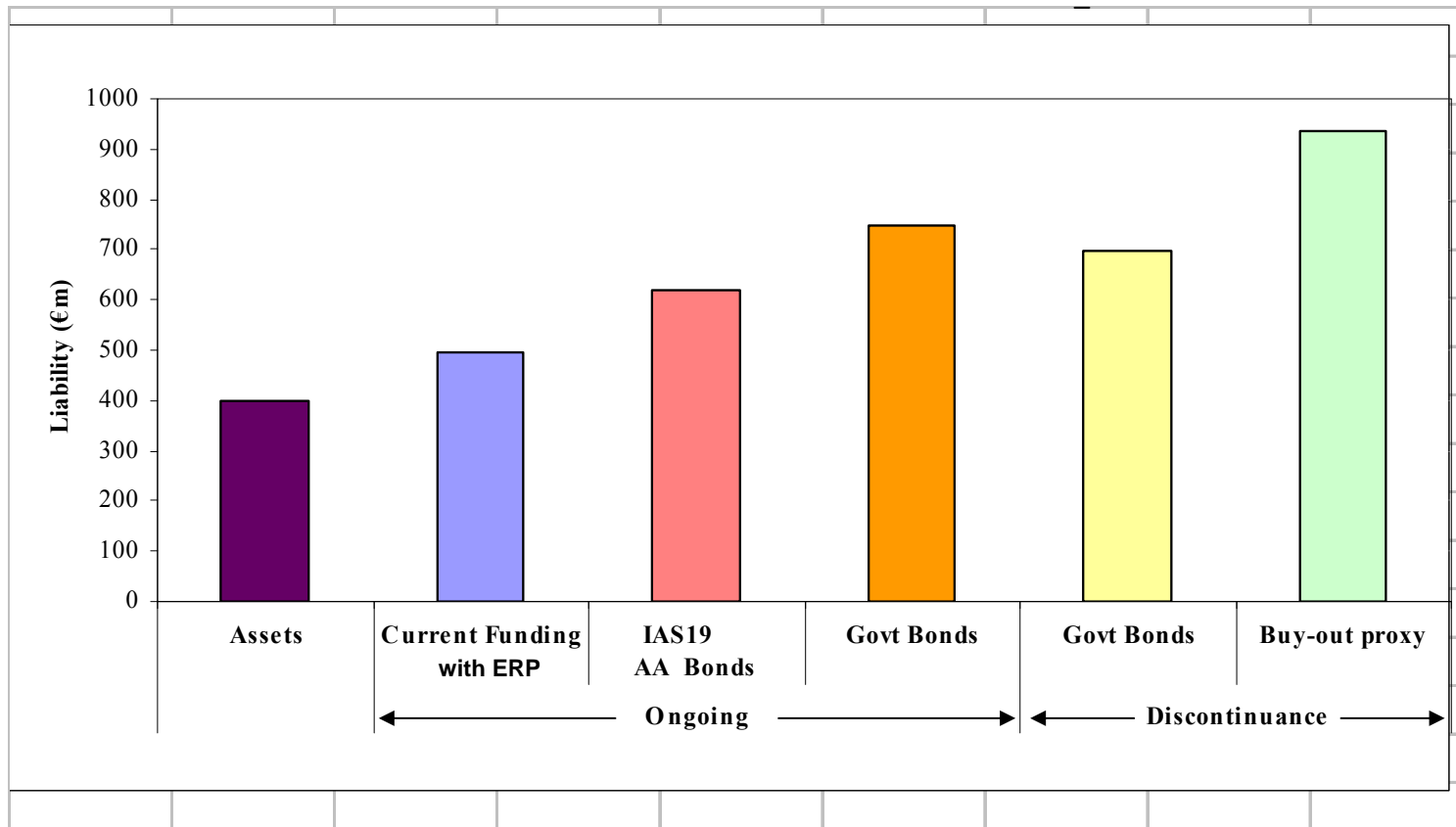
Will we get more or less convergence as the IORP Directive takes effect?

Little or no change expected in some countries, but many countries have yet to decide or communicate their approach!

Three distinct approaches so far:

1. **Ireland:** Continue with the uniform minimum standard for all schemes, with a strengthened reserving basis as a consequence of financial market changes.
2. **Netherlands:** Fully prescriptive approach with market based technical reserves (based on prescribed term dependant discount rates), plus additional risk based solvency capital and strict deficit correction periods. Discretionary indexation.
3. **UK:** Each scheme to decide for itself. No rigid minimum or maximum but strong on principles, governance and disclosure, with Regulator intervening if trustees and sponsors cannot agree a funding strategy (or end up agreeing a weak strategy). Strong expectation for trustees to behave like major creditors, threat of intervention otherwise.

Illustrative range of technical provisions in the UK under new SSFP regime



All together, in numbers

Minimum technical provision vs. IAS19 liability obligation

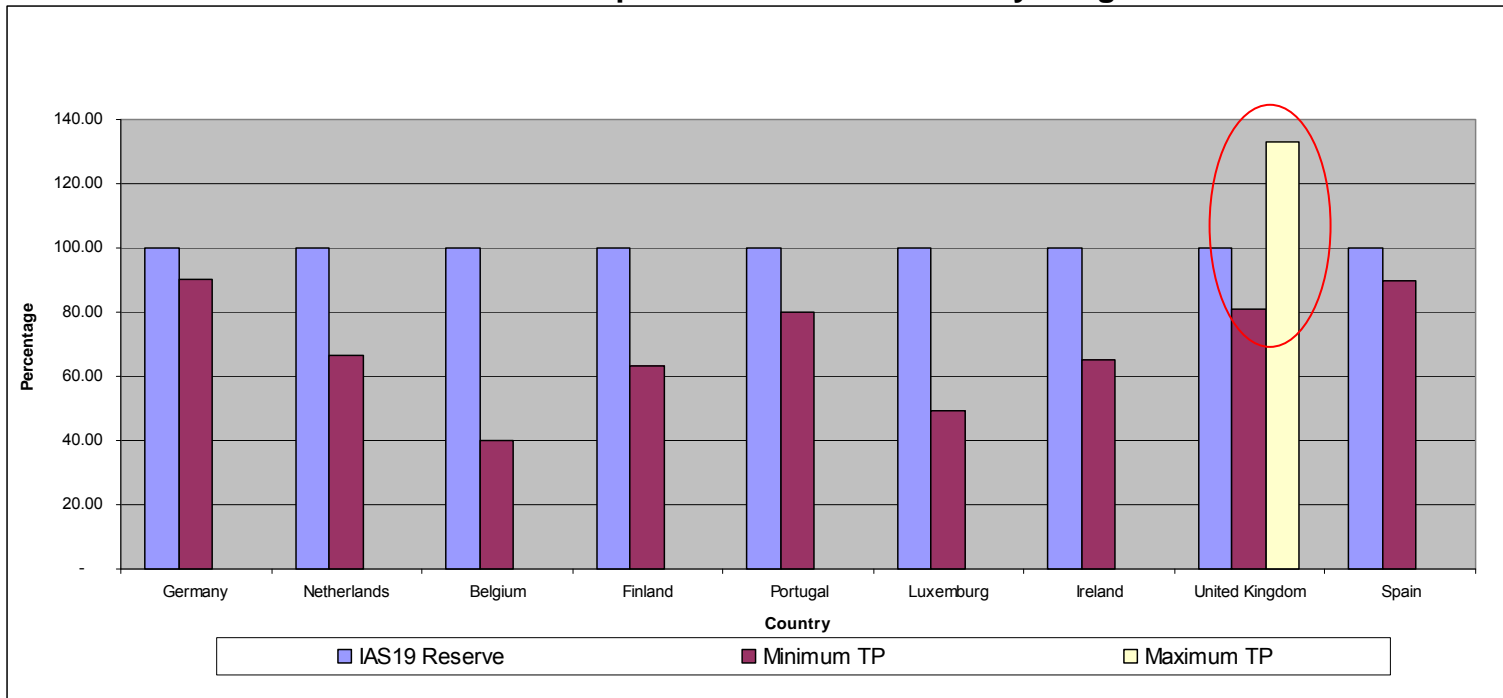


Illustration for an active member within 15 years of retirement, and full indexation in payment; differentials would be different for pensioners.

Funded pension security at the minimum level varied vastly between countries before the IORP Directive, and looks like continuing to do so.

What next? Current issues and developments

- Greater market consistency?
 - Assets at market value
 - Discount rates linked to actual asset portfolio or yields on matching investments
- Greater regard for liability profile? Term structure of interest rates, matching portfolios, etc?
- Greater focus on non financial risks?
 - More 'direction' on base mortality assumption?
 - Uncertainty about future longevity to become a major assumption?
- Greater focus on other risks to pension security?
 - Integrated investment and contribution strategies?
 - Funding targets and deficit plans linked to sponsor risk?
 - Explicit allowance for investment risks?
- Greater focus on funded collateral via tighter prescription (as in Netherlands) possibly with some relaxation elsewhere (eg discretionary indexation)?
- Greater focus on re-inventing a scheme specific solution within a principles based framework, with checks and balances (ie funded collateral seen as one pillar of a bigger security picture and trade-offs with other pillars possible at national or scheme level with full transparency)?

Questions for discussion