The Actuarial Profession
making financial sense of the future

PUTTING ECONOMICS INTO PENSION FUNDS
26TH JUNE 2007, LONDON

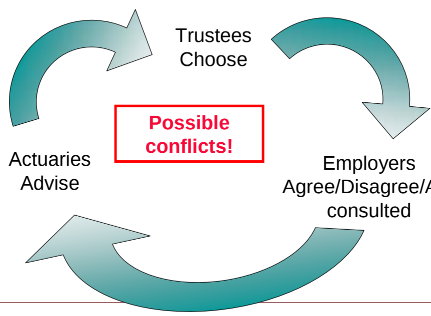
Advising Pension Trustees – Funding and Recovery Plans

Peter Bowers & Ian Shepherd
Mercer

Agenda

- The valuation process
- How much risk?
- Company covenant assessment
- Actuarial assumptions
- Technical provisions
- Recovery plans

The valuation process
Actuaries engage with Trustees



The valuation process
If the company disagrees?

- Negotiate
- Consider Mediation
- Take Advice
- Consider Reduction of Future Benefit Accruals

If all else fails…
report to the Regulator within 15 months plus 5 working days of effective date

The Actuarial Profession
making financial sense of the future

The valuation process
How TPR will regulate funding of db plans

4.5 If we do decide to take a closer look at a scheme, we will be interested in whether the trustees have followed the due process, including taking appropriate advice, to help us decide whether they have achieved the right outcome for the scheme, and whether it is necessary to take remedial action. We may, in particular:

- ask the trustees to demonstrate that they have taken all appropriate factors into consideration, including guidance in the regulator's code of practice No 3, *Funding defined benefits*;
- scrutinise the assumptions the trustees have chosen in the light of actuarial and other advice provided to them;
- consider the specific circumstances of the scheme and its employer, in particular the strength of the employer covenant;
- consider whether the trustees or employer have taken any other steps to mitigate the funding risk, such as a modification of future accrual; or
- consider whether trustees have accepted the use of a contingent asset to reduce risks arising from the recovery plan or, alternatively, to support technical provisions.

The Actuarial Profession
making financial sense of the future

The valuation process
Actuarial method

Must be an "accrued benefits" method:
- Projected unit – generally preferred
- Current unit
- Partly-projected unit
- Defined accrued benefit

Use of attained age?

The Actuarial Profession
making financial sense of the future

How much risk?
Actuarial assumptions

The basic investment choice:

- Low risk
  - Gilts, corporate bonds, swaps
  - Higher expected contributions, little variation
- High risk
  - UK and global equities, property, hedge funds etc
  - Lower expected contributions, higher variation
  - Possible need to make good shortfalls

The Actuarial Profession
making financial sense of the future

How much risk?
Meet by contributions or investment return

The Actuarial Profession
making financial sense of the future

How much risk?
Supports for risk taking

- Two possible supports for risk taking:
  - Surplus assets
  - Employer covenant
- These provide a fall back position if the adverse experience occurs
  - Reduced surplus
  - Higher employer contributions

More prudent assumptions if covenant weak?

More conservative investments if covenant weak?

The Actuarial Profession
making financial sense of the future

Company covenant assessment
From TPR …

"It is essential for the trustees to form an objective assessment of the employer's financial position and prospects as well as his willingness to continue to fund the scheme's benefits (the employer covenant)"

TPR's Code of Practice on Funding Defined Benefits – February 2006

The Actuarial Profession
making financial sense of the future

Company covenant assessment
"Objective assessment"

Objective:

(adjective: to be based on facts, making a decision that is based on facts rather than feelings)

Assessment:

(noun: a calculation about the cost or value of something)

The Actuarial Profession
making financial sense of the future

Company covenant assessment
Basic questions trustees should be asking

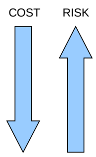
- What contributions can the employer's cash flow support, now and in the future?
- How might this cash flow change in difficult trading conditions or as a result of a corporate transaction?
- What is the employer's general attitude to supporting the pension scheme? Can we improve the position?
- Does the balance sheet cover the wind-up debt? Are there prior claims on the assets?

The Actuarial Profession
making financial sense of the future

Company covenant assessment
How and what to do with it once you have it

How? … it depends!

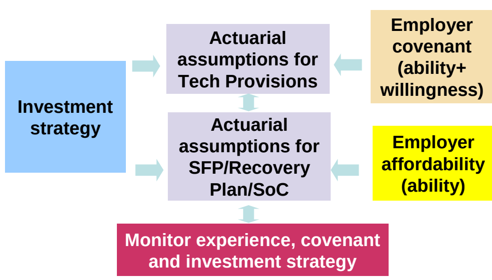
- Do nothing
- Trustees' own assessment
- Employer presentation
- Standard off the shelf products
- Bespoke review



Need to match the approach to the circumstances. Complexity, conflicts, resources, time, skills and experience and the desire to have a good audit trail are all relevant factors.

NB: Beware the situations where not much attention is paid to a good covenant, but the employer won't pay the level of contributions the trustees request (implies the covenant is weak - "willingness and ability") and now the trustees have no evidence!

Company covenant assessment
What to do with it once you have it



Company covenant assessment
What to do with it once you have it

What to do with it … it is not scientific

- Stronger covenant
  - Lower funding target
  - Greater flexibility on investment strategy
  - Possibility of shorter recovery plan (or contingent assets and longer)
- Weak covenant
  - Stronger funding target
  - Cautious investment strategy
  - Short v Long recovery plan?
  - Consider options for additional protection
- Very weak covenant
  - More options open up again? Seek help!

Actuarial assumptions
The basic investment choice

- Low risk
  - Gilts, corporate bonds, swaps
  - Higher expected contributions, little variation
- These investments provide a fixed investment return of interest and an eventual return of principal
- The investment return to maturity can be developed directly from current market prices

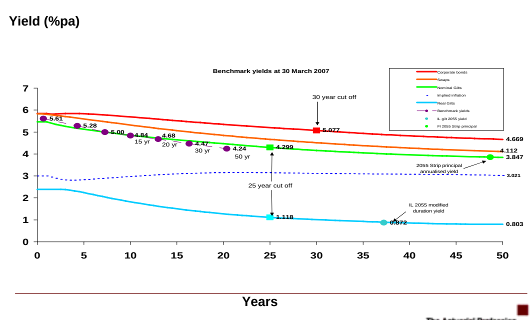
The Actuarial Profession
making financial sense of the future

Actuarial assumptions
Yields to maturity available from financial markets

	30 March 2007			5 April 2007		
	nominal	real	inflation	nominal	real	inflation
Gilts (20 year/>5 year)	4.68%	1.45%	3.18%	4.72%	1.48%	3.19%
Average scheme (>25 flat)	4.40%	1.23%	3.13%	4.45%	1.27%	3.13%
Average scheme (full)	4.21%	1.09%	3.09%	4.26%	1.13%	3.10%
“ultra long” gilts (2055/2035)	4.24%	1.17%	3.03%	4.28%	1.21%	3.03%

The Actuarial Profession
making financial sense of the future

Actuarial assumptions
Consistency with LDI strategies



The Actuarial Profession
making financial sense of the future

Actuarial assumptions
The basic investment choice

- High risk
  - UK and global equities, property, hedge funds etc
  - Lower expected contributions, higher variation
  - Possible need to make good shortfalls
- These investments do not provide a fixed investment return
- The investment return cannot be developed directly from current market prices

The Actuarial Profession
making financial sense of the future

Actuarial assumptions
Building block approach to equity returns

- Typical approach to estimating investment return is to consider equity yield as the sum of:
  - Current bond yield (derived from the market)
  - Equity out-performance assumption e.g. 3.5%
- Risk is generally assessed by considering investment volatility

The Actuarial Profession
making financial sense of the future

Actuarial assumptions
Probability of out-performance

Time (years)	Achieve 0% p.a.	Achieve 1% p.a.	Achieve 2% p.a.	Achieve 3% p.a.	Achieve 4% p.a.
5	67%	62%	57%	52%	48%
10	73%	67%	60%	53%	47%
15	78%	71%	63%	54%	46%
20	81%	73%	65%	55%	45%

Probabilities based on e=3.5%/sd=17.5%

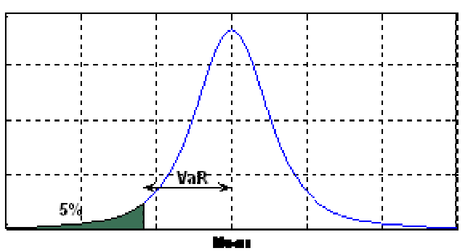
The Actuarial Profession
making financial sense of the future

Actuarial assumptions
Other investments

- Investments such as:
  - Property
  - Hedge funds
  - Private equity
- Can be analysed in much the same way as equities:
  - Expected return
  - Volatility

The Actuarial Profession
making financial sense of the future

Actuarial assumptions
Value at risk analysis



The Actuarial Profession
making financial sense of the future

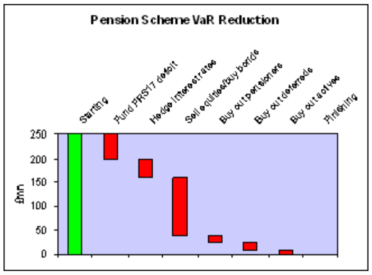
Actuarial assumptions
Value at risk analysis

Time period (years)	95th percentile underperformance (p.a.)	95th percentile underperformance (cumulative)	Undiscounted value of 95th percentile underperformance
5	-9.4%	-39%	£19m
10	-5.9%	-46%	£23m
15	-4.3%	-49%	£24m
20	-3.4%	-50%	£25m

Sample simplified VaR analysis

The Actuarial Profession
making financial sense of the future

Actuarial assumptions
Reducing risk



Technical provisions
Financial assumptions

	Current best estimate	Technical provisions
Investment return	6.6%	5.3%
Salary growth	5.1%	5.1%
Pension increases	3.1%	3.1%

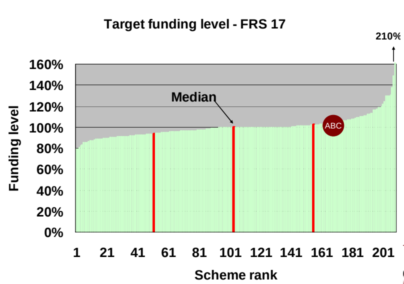
Best estimates

1. **Investment return – asset class building block approach**
2. **Salary growth – implied inflation + 2%**
3. **Pension increases – implied inflation**

Technical provisions – gilt yield + 0.9%

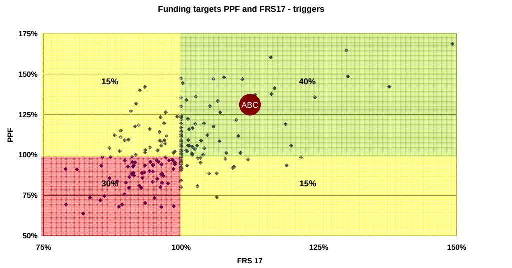
The Actuarial Profession
making financial sense of the future

Technical provisions
% of FRS17 liabilities



The Actuarial Profession
making financial sense of the future

Technical provisions
Trigger likely?



The Actuarial Profession
making financial sense of the future

Technical provisions
Longevity assumptions

- We believe that PA92 mc YoB provide a good starting point
- Legislation requires that *"the mortality tables used and the demographic assumptions made must be based on prudent principles, having regard to the main characteristics of the members as a group and expected changes in the risks to the scheme"*
- Paragraphs 80-81 of the Code of Practice require the trustees to discuss with their actuary the latest available relevant data on likely future mortality rates.
- Such a discussion should cover
  - Adjustments based on location and nature of employment
  - The existence of 00 tables (consistent with 92 mc) and the possibility of average pay/pension based adjustments
  - Trend is to lc or mc with an improvement floor ie up to 5% on liabs
  - Where appropriate, mortality hedging, projection and variability

The Actuarial Profession
making financial sense of the future

Recovery plan
From TPR …

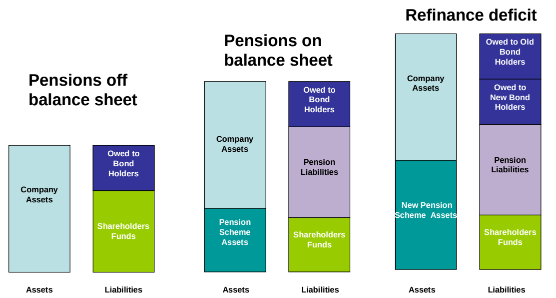
"It is essential for the trustees to form an objective assessment of the employer's financial position and prospects as well as his willingness to continue to fund the scheme's benefits (the employer covenant)"

"Trustees should aim for any shortfall to be eliminated as quickly as the employer can reasonably afford. What is possible and reasonable will depend on the trustees' assessment of the employer's covenant"

TPR's Code of Practice on Funding Defined Benefits – February 2006

The Actuarial Profession
making financial sense of the future

Recovery plan - fund now?



The Actuarial Profession
making financial sense of the future

Recovery plan – fund later?

- What contributions can the employer's cashflow support?
- Does the balance sheet cover the wind-up debt?
- What is the employer's general attitude to supporting the pension scheme?
- Can we learn anything from rating agencies/ forensic accountants?

The Actuarial Profession
making financial sense of the future

Recovery plan
Employer cash flow

Operating cash flow/net deficit

Company	2.1
FTSE 350:	
25th percentile	2.0
Median	4.8
75th percentile	9.2

How might cash flow change in difficult trading conditions?

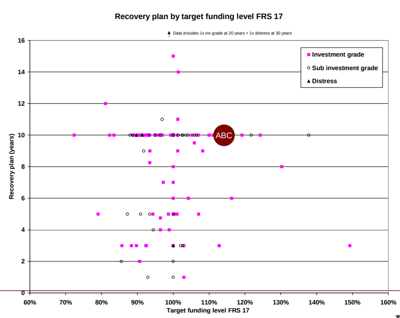
The Actuarial Profession
making financial sense of the future

Recovery plan
Balance sheet position

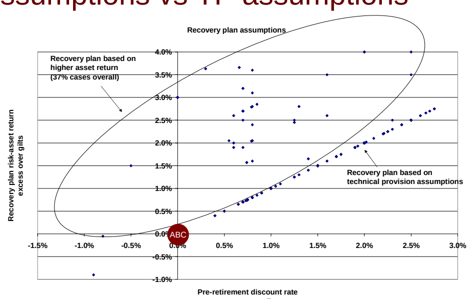
Pension deficit vs shareholder equity

Company	2.5%
FTSE 350:	
25th percentile	11.3%
Median	8.4%
75th percentile	2.5%

Recovery plan
Period vs funding and covenant



Recovery plan
Assumptions vs TP assumptions



Summary

- The valuation process
- How much risk?
- Company covenant assessment
- Actuarial assumptions
- Technical provisions
- Recovery plans

The Actuarial Profession
making financial sense of the future

Questions for discussion

1) For a strong employer, is a 10 year recovery period appropriate?
2) At what stage in the valuation do you look at strength of employer covenant/investment strategy?
3) To what extent are actuaries using a "PPF" funding target (as opposed to FRS17)?
4) At what point will PA92(mc) cease to be the benchmark mortality assumption.

The Actuarial Profession
making financial sense of the future