

# Society of Actuaries in Ireland

Presentation to Partnership Pensions Review Group

Funding Irish defined benefit plans

Annuity issues

*13 December 2006*



## Funding defined benefit plans - introduction

Fundamental points – the **cost** of a DB pension promise:

1. Cannot be known in advance with certainty
2. Depends on
  - benefit structure
  - **actual** salary/price inflation
  - **actual** demographics
  - **actual** investment returns achieved

and therefore...

3. **Cost** does not depend on the actuary's assumptions or methodology.

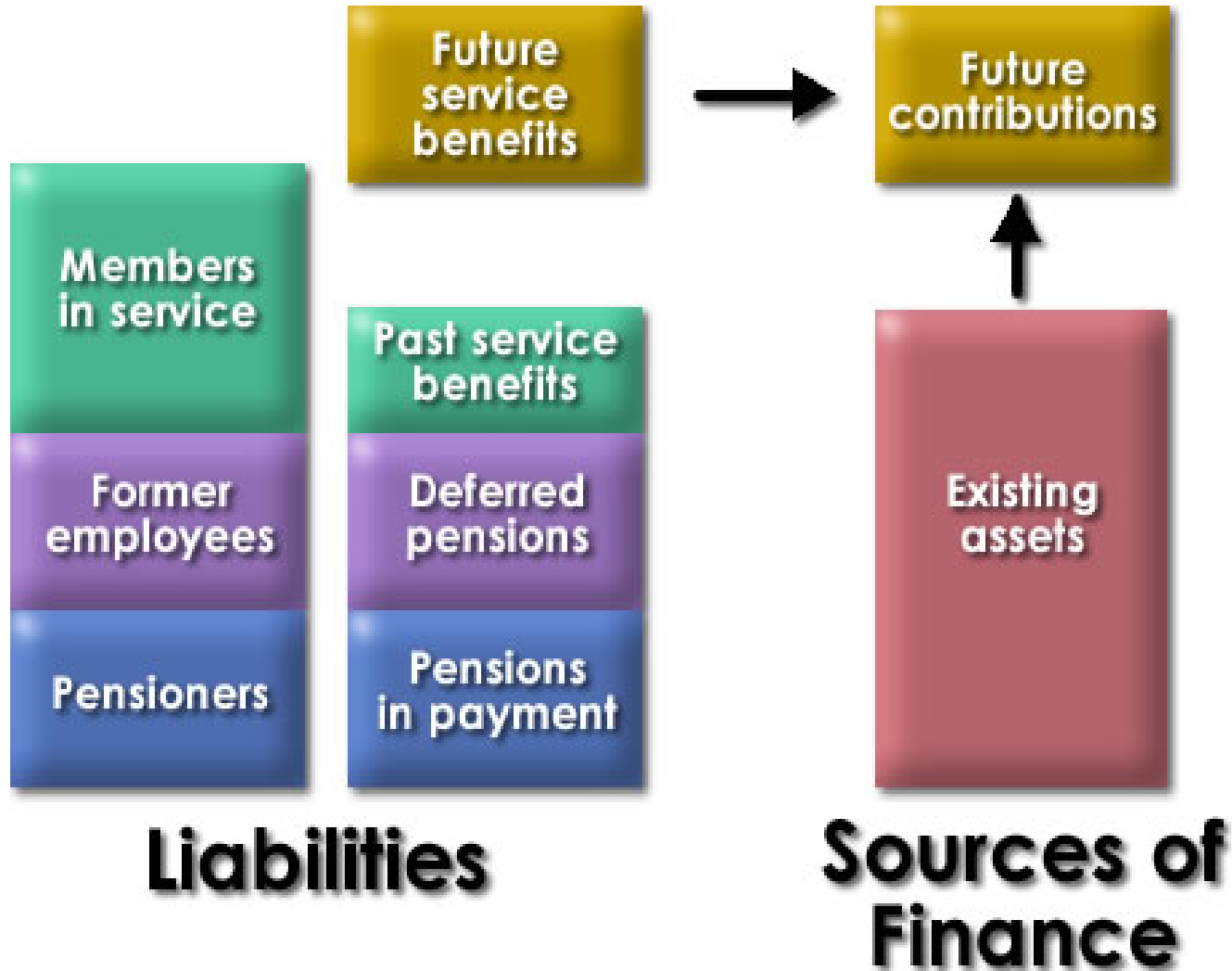


## Introduction (contd.)

- 4. *Valuation*** of future obligations is dependent on assumptions. If pensions are guaranteed, the starting point is to capitalise future projected benefit payments using a “risk-free” interest rate.
- 5. *Valuation*** is required for:-
  - Funding : the pace at which money is set aside to meet future obligations
  - Regulatory: how companies back-up the pension promise – how secure is my pension?
  - Financial Reporting : how this company’s pension obligations are measured relative to its peers



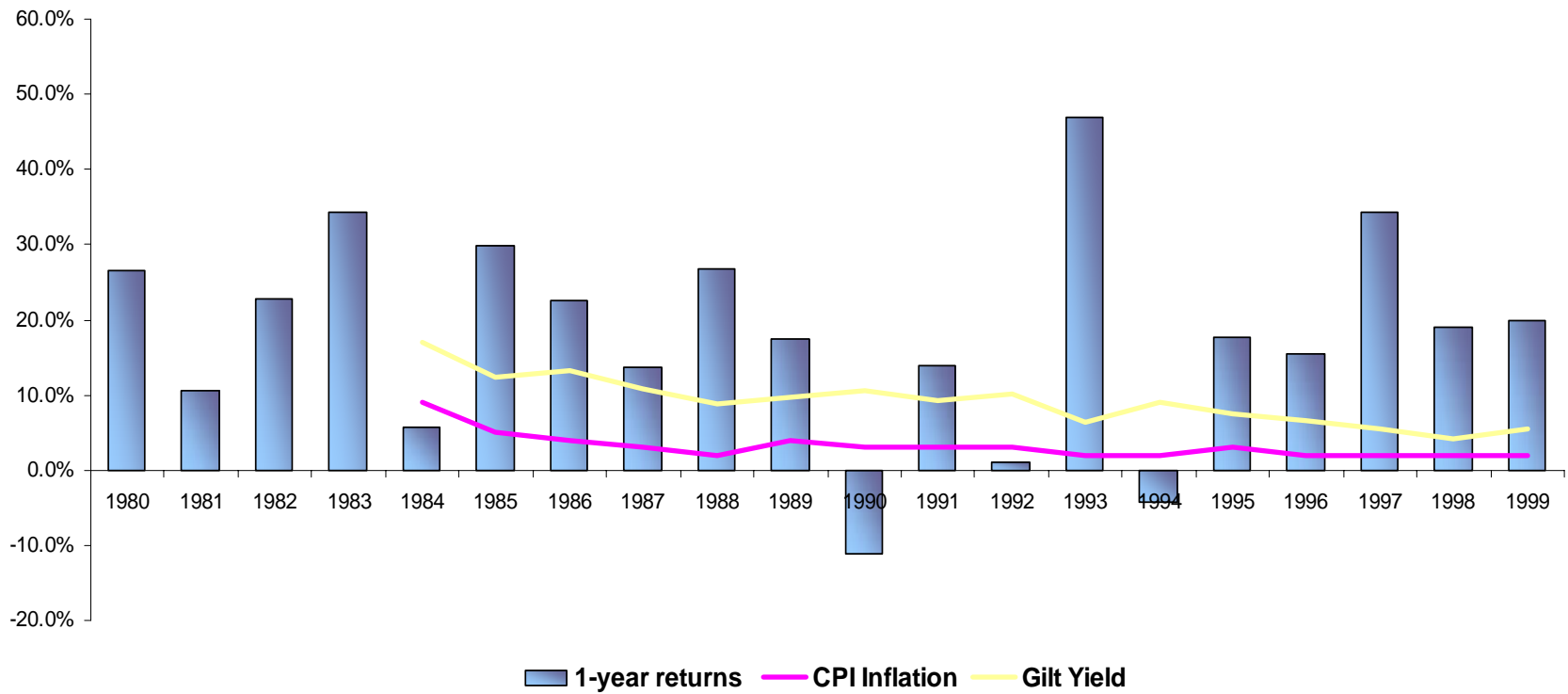
# Pension Funding Model





# The way things were

### Average Pension Managed Fund Returns (1980 - 1999)





## And as if that wasn't easy enough ...

- Typical (male) pensioner life expectancy of 14.6 years at age 65
- Concept of funding minimum commitments on wind-up but invariably huge discontinuance surplus since:-
  - No preservation/revaluation of deferred benefits
  - Much lower annuity cost (€833 per €100 p.a. of pension in 1980)
- **Subjective financial environment**
  - No pension accounting rules
  - Expectation of continued out-performance by equities
  - Practice of using “long-term” funding assumptions and smoothing asset returns
  - Little attention paid to risk
  - Plans typically small relative to sponsors
  - Small accrued assets/liabilities relative to future accrual



## Typical Actuarial Review in 1990\*

	Age 35	Age 45	Age 55
Next year's (total) contribution rate			
No pension indexation	8.4%	10.1%	12.1%
CPI linked pensions increases	12.2%	14.7%	17.7%

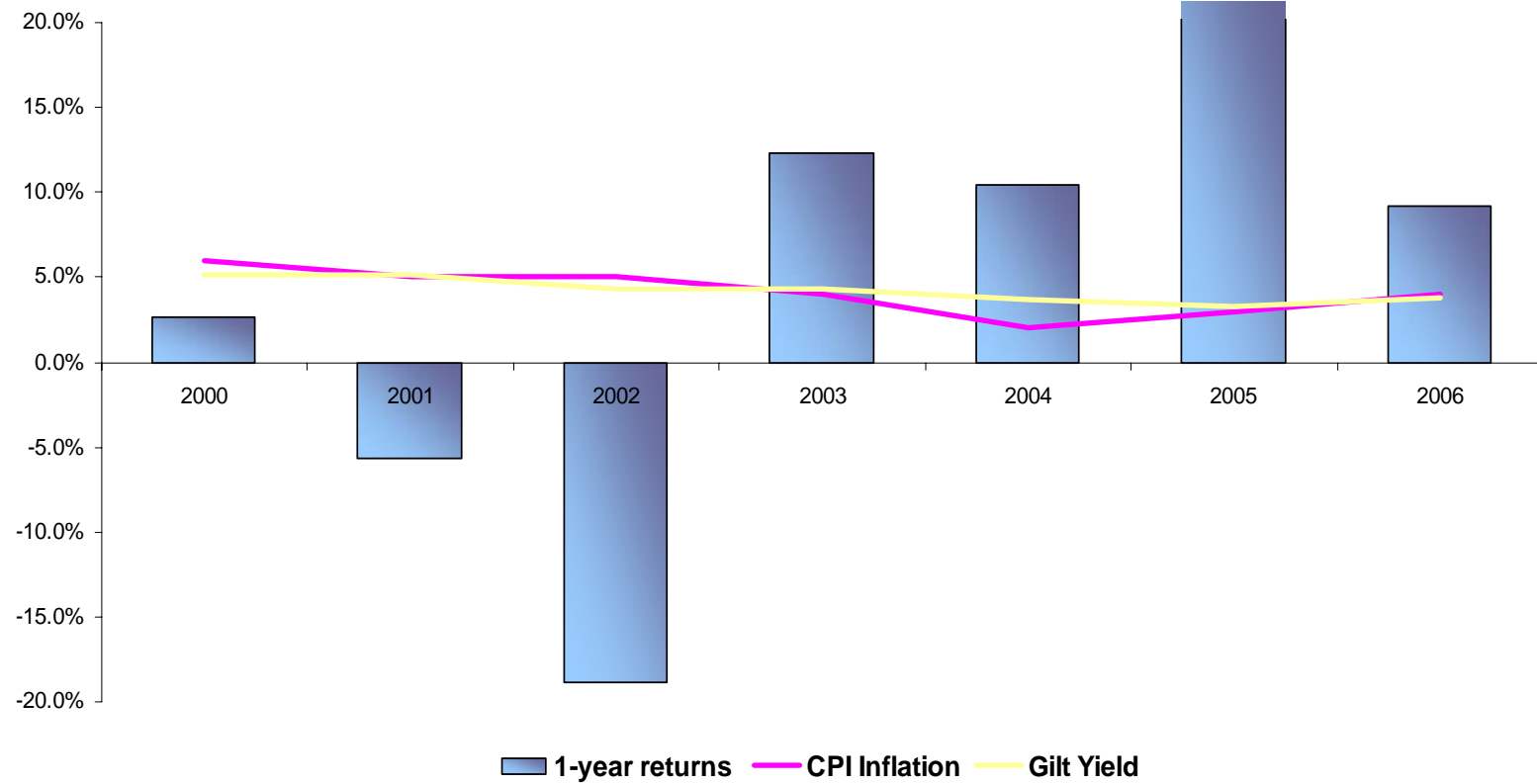
- Usually mitigated by surplus
- No other financial measures

\* Contribution rate for 1/60<sup>th</sup> plan with 50% spouse's pension and based on 9% interest rate, 5% CPI inflation, 7% salary increases and PA (90) mortality



# What's changed ...

Average Pension Managed Fund Returns (2000 - 2006)







## And as if this wasn't bad enough ...

- Typical (male) pensioner life expectancy of 20.2 years at age 65
- Same basic minimum funding concept but much higher commitments on wind-up
  - Full preservation
  - Much higher annuity cost (€2,450 per €100 p.a. of pension in 2006)
- **More disciplined financial environment**
  - Prescriptive accounting rules (not just pensions)
  - Still usual to set funding with expectation of out-performance from equities but
  - Much greater awareness of risk
  - Trend to market-based assessment of financial assumptions and asset valuation
  - Maturing plans are large relative to sponsors
  - Large accrued assets/liabilities relative to future accrual



## Typical Actuarial Review in 2006\*

	Age 35	Age 45	Age 55
Next year's (total) contribution rate			
No pension indexation	11.2%	14.6%	19.0%
CPI linked pensions increases	14.3%	18.6%	24.2%

- Usually exacerbated by deficit
- Complicated by other financial measures
- Not risk-free and arguably too optimistic for a very mature plan

*\* Contribution rate for 1/60th plan with 50% spouse's pension and based on 4.25% interest (post) 6.5% asset return (pre), 2.25% CPI inflation, 3.75% salary inflation, and PMA92 – 2025 mortality*



## Comparison of funding requirements 1990 -v- 2006

	<b>1990</b>	<b>2006</b>
Future service funding rate	10.1%	14.6%
Plus insurance costs/expenses	2.0%	2.0%
Indicative adjustment for past funding	(2.0%)	+ 2.0%
Less member contributions	<u>(5.0%)</u>	<u>(5.0%)</u>
Employer contribution requirement	<u>5.1%</u>	<u>13.6%</u>



## Key Conclusions

- Pension provision requires higher funding than when plans were set-up
- Unduly optimistic to expect asset returns to fill the breach
- Retention strategies typically include cost sharing and/or reductions in benefits (or guaranteed elements of benefit provision). Better to under-promise and outperform?
- Much more awareness of investment risk:
  - Evidence of reduction in equity weightings
  - Matching duration of bond portfolios with duration of liabilities
  - Derivative based strategies to achieve further risk control
  - Risks measured and controlled in line with other business risks
  - Availability of new financial products (LDI, increased flexibility in annuity market?)
- *“Pension benefits that depend, for their delivery, on uncertain equity returns are in fact over promised. In an ideal world either funding would be increased to match the promise or the promise would be reduced”*



## Where is the Minimum Funding Standard coming from?

- Rationale is that pension promise should be backed by sufficient assets to ensure delivery
- Board has power to require benefits to be reduced where funding falls short of regulatory requirements
- Test is that assets (at a point) should meet S48 wind-up liabilities
  - expenses
  - annuities for pensioners
  - statutory transfer payments for e'ees/deferreds (but a long way short of a guarantee)

BUT no account of asset distribution

- Scope to use “substituted” pension increase rate for CPI linked pensions (< the wind-up cost of plan rules)



## Where is FRS17 coming from?

- Corporate pension expense should be assessed in an objective, transparent and comparable manner. Investors should be able to make judgements on the scale of benefit obligations and the ability of corporations to meet costs/manage risks.
- Prescribed methodology covering assumptions, actuarial method, treatment of past service costs etc.
- Argument that liabilities are debt-like and should be capitalised using risk-free gilt rate. Valuation not influenced by assets held by Fund.
- Current debate
  - Corporate bond -v- “risk free” discount rate
  - Allowance for future salary increases?
  - Credit for anticipated equity return in P&L a/c?
- *“Pensions accounting is opaque and unduly rewards companies whose pension funds invest in equities with higher profits while concealing added risk. We expect that future changes to pension accounting will remove this so-called bias and will prompt companies to give consideration to the zero equity approach.”*



In practice how does this work out for different plan profiles?

	Age Profile of Employees			Pensioners
	35	45	55	65
<b>Young plan</b>	100%	-	-	-
<b>Mid plan</b>	15%	50%	15%	20%
<b>Mature plan</b>	-	20%	30%	50%
<b>Ultra-mature plan</b>	-	-	10%	90%



## Valuation of past service liabilities (no pension indexation) - 2006

	1990 Assumptions	2006 Assumptions	2006 MFS	2006 FRS17
<b>Young plan</b>	€3,300	€4,500	€2,300	€7,700
<b>Mid plan</b>	€10,200	€15,800	€13,500	€19,200
<b>Mature plan</b>	€14,700	€23,900	€23,700	€25,800
<b>Ultra mature plan</b>	€17,200	€28,900	€31,800	€28,600





## Valuations of past service liabilities (CPI linked pension indexation) - 2006

	<b>2006 Assumptions</b>	<b>2006 MFS (fixed increases)</b>	<b>2006 MFS - No indexation</b>	<b>2006 FRS17</b>
<b>Young plan</b>	€5,700	€2,900	€2,300	€9,800
<b>Mid plan</b>	€20,200	€17,400	€13,500	€24,500
<b>Mature plan</b>	€30,500	€30,800	€23,700	€32,800
<b>Ultra mature plan</b>	€36,800	€41,900	€31,800	€36,400



## MFS – What's broken?

- Primarily a challenge for more mature plans – especially if long-term funding basis is “optimistic”
- 10-year funding potential already provides a lot of flexibility
- Further flexibility by removing pension indexation (and revaluation?) – but should be accompanied by a more robust valuation basis for employees
- Significant “step-up” of liability on retirement:-
  - Argument that represents considerable inequity between employees and pensioners
  - Practical difficulty in consenting to early retirement



## Conclusions

- The MFS is not driving pension cost!
- Mature plans have least wriggle room
- Any change to the MFS needs to consider position on “real” wind-up - or else debt on employer legislation/central protection fund?
- Possible options include:-
  - Capital in lieu of pension
  - Protect minimum € amount of pension
  - Certification at < 100% (e.g. 90% coverage deemed adequate for compliance?) but with regard to asset distribution?
  - Removal of pension indexation/statutory revaluation
  - Re-prioritise early retirees to facilitate this aspect of plans operation
- Change to a subjective “long-term” approach would be contrary to modern financial economic principles and would likely be regarded as retrograde step.



# Annuities

- An annuity provides a guaranteed benefit payable for remaining lifetime (20 – 30 years depending on age at retirement)
- The primary drivers for annuity rates are:
  - rates of investment return on matching assets (bonds)
  - mortality rates and expected future mortality improvements
- Uncertainty as to the extent of future mortality improvements represents a significant risk
- Investment in non-matching assets would involve further risk



## State annuity support?

- Risks are essentially the same, whether annuities are provided by insurance companies or the State

*“It may not be possible for the State to offer annuities at rates that are significantly better than those currently available from commercial insurers, if the proposed fund is to operate on a cost-neutral basis and investment and longevity risks are fully factored in.”*



## Alternative approaches

- We have suggested that consideration be given to possible alternatives to the requirement to secure pensioners' benefits by purchasing matching guaranteed annuities in the event of a scheme winding up.
- Trustees could potentially be given the power to secure the pensioner liabilities in alternative formats, which could include:
  - the substitution of an annuity that carries a limited level of investment risk for a guaranteed annuity, or
  - converting pensions in payment to lump sum transfer values which could be invested in ARFs
- However:
  - the trade-offs involved in any of the above benefit substitutes would need to be clearly understood e.g. in the case of the ARF alternative, the trade-off for pensioners is between flexibility and control of capital on the one hand, and income security on the other
  - we believe that the ARF alternative should only be allowed in respect of pension benefits above a specified threshold designed to ensure an appropriate level of income security