Faculty of Actuaries **Institute of Actuaries**

EXAMINATIONS

September 2003

Subject 404 — U.K. Fellowship Pensions

Paper Two

EXAMINERS' REPORT

Introduction

The attached subject report has been written by the Principal Examiner with the aim of helping candidates. The examiners are mindful that a number of interpretations may be drawn from the syllabus and Core Reading. The questions and comments are based around Core Reading as the interpretation of the syllabus to which the examiners are working. They have however given credit for any alternative approach or interpretation which they consider to be reasonable.

The report does not attempt to offer a specimen solution for each question — that is, a solution that a well prepared candidate might have produced in the time allowed. For most questions substantially more detail is given than would normally be necessary to obtain a clear pass. There can also be valid alternatives which would gain equal marks.

J Curtis
Chairman of the Board of Examiners

25 November 2003

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(i) **Report to Finance Director**

Employer's Responsibilities / Powers

- The main responsibility is to finance benefits by paying employer contributions
- For a DB scheme, benefits are specified and employer typically meets all costs over and above those paid by members
- Usually has some flexibility to determine its contribution rate — TD&R will specify balance of powers
- On establishment of a scheme, employer sets
  - benefit levels
  - member contribution rates
  - eligibility criteria
- Once scheme established, employer must comply with its obligations under the TD&R
- Employer has some input to investment decisions made by Trustees
- Will normally need to give consent to any rule amendments proposed by Trustees
- Employer may have some power to amend Trust Deed (with Trustee agreement)
- Employer usually has some power to appoint & remove Trustees
- Employer will generally have the power to wind up the scheme (with notice)

Members' Responsibilities / Powers

- Beneficiaries of the scheme — have few responsibilities
- May share financing responsibilities by paying member contributions
- May make further voluntary contributions
- Some choices over benefit options / timing but not many
- Need to advise administrators of changes in personal circumstances (marriage, dependants, changes of address etc.)

Risks for Employer

- Main risk for the sponsoring employer of a DB scheme is that the cost of providing benefits is greater than anticipated
  - Risk may be in terms of cash contributions needed to the scheme
  - Or in terms of cost measured under accounting standards (FRS17/FAS87)
- Risk can be in terms of general upward trend in level of costs or short-term volatility

- Costs not known in advance so funding rates are based on assumptions

- Economic risks which may result in increased cost to the employer
  - salary growth higher than expected….
  - inflation higher than expected…
  - lower investment returns than expected….

- Demographic risks can lead to greater costs, in particular, increased life expectancy means members are receiving pensions for longer

- Legislative changes may
  - increase the levels of benefit provided
  - reduce the flexibility of the employer to fund them at the rate they choose (i.e. MFR / scheme-specific funding standards)

- Where benefit options are not financially neutral, members may select against the scheme by picking the benefit of greatest value

Risks for Members

- Benefits accrued in the past not paid in full for some reason
  - underfunding
  - Insolvency of sponsoring employer
  - Fraud

- For future accrual, a benefit expectation may be reduced due to changes to the benefit structure or termination of the scheme

- Member's share of the costs may be increased for future accrual

Differences in responsibilities/risks for DC

- Employer Responsibilities
  - Just to pay contributions at the specified rates
  - perhaps a greater obligation to educate or provide financial advice to employees

- Financial risks substantially eliminated

  - Contribution rates known in advance
  - Variability is limited to any matching requirements or changes in size of membership
  - There may be some pressure to increase employer contributions if members benefit expectations are not met

- Member Responsibilities
  - share in financing, in particular, meeting balance of cost to meet any desired target
  - selecting investment options (subject to those made available)
  - some control over form of benefits selected

- Main risk for members is that benefits are uncertain
  - Members now bear the risks of poor investment returns
  - benefits at retirement no longer linked to individual salary growth
  - member exposed to higher costs of purchasing annuity at retirement
  - …due to falling yields and increased life expectancy

Steps/decisions involved for company

- Review their objectives for benefit provision
- Establish what they can afford
- Consider desired benefit levels, members expectations
- Consider various designs/cost them and check against objectives and constraints
- Specific decisions need to be made regarding Defined Contribution design
  - flat rate or age/service related scales?
  - any matching of member contributions?
  - will the scheme be contracted in or out?
  - what investment options will be offered?
  - what non-retirement benefits will be provided (death benefits, PHI)?

- Will benefits be changed for new hires only or all future accrual for existing members?
  - If new hires only, cost savings will take some time to emerge
  - If all future benefit accrual, maybe some employee relations issues?
  - Could make switching to DC for future service optional for existing members
  - Any "grandfathering" for some current DB members e.g. members over 50?

Options for dealing with accrued benefits

- Maintain salary link based on accrued service until member, leaves, retires or dies?
  - Closest to members' current expectations
  - But retains all the current financial risks for the employer
  - Further employer contributions may be needed even if scheme is now fully funded

- Treat members as leavers (current benefits plus statutory revaluation), but continue to operate the scheme
  - Reduces ultimate benefit levels as salary link is broken
  - Retains most of the other risks to the employer
  - Further employer contributions may be needed

- Wind-up the scheme and secure benefits in some way
  - Transfer values to new DC arrangement
  - Purchase annuities
  - offer cash equivalents for members to transfer to individual arrangements
  - probably unable to secure full entitlements unless prepared to make additional funding payments
  - would need to buy immediate annuities for any pensioners

Trustees' Responsibilities / Actions

- Operate within the Trust Deed and Rules of the Scheme / Legislation / Trust Law etc.

- Given the possibility of benefit changes and/or wind-up of current scheme, should review the Scheme Amendment and Termination section of the Trust Deed

- Review balance of powers between employer and trustees with regard to triggering the wind-up of the scheme, distribution of surplus etc.

- Act prudently
  - Consider the likelihood that the current scheme may be wound-up
  - Establish what the company's intentions are with regard to the current scheme
  - Decide how confident they are in the employer's strength and commitment to fund the current scheme, should the employer wish to continue it in some form

- Maintain confidentiality
  - Will need to consider what can be said to members and when

- Seek specialist advice
  - Should contact the Scheme Actuary and seek his/her advice on all these issues
  - Seek an up to date assessment of the funding position of the scheme, particularly considering discontinuance position and impact of closure to new entrants
  - Establish whether there would be a statutory debt on the employer if the scheme were to be wound up
  - Seek specialist investment advice and consider whether it is appropriate to review the investment strategy in light of possible wind-up / closure of scheme

- Act in best interest of beneficiaries
  - Need to be aware of potential conflicts of interest (e.g. if a trustee is also a director of the employer)
  - Focus on the security of accrued rights (rather than changes to future benefits)
  - Consider whether or not it is in the interest of beneficiaries for the scheme to be wound up or continued

- Strike a fair balance between the interests of different beneficiaries
  - Trustees will need to consider whether certain benefit options should be restricted
  - E.g. stop early retirements which can advance the priority of individuals benefits and reduce the security of other members' benefits
  - Review the calculation basis for transfer values (to stop those that transfer gaining an advantage over members remaining)
  - Would also need to consider these issues if scheme was sufficiently well funded for there to be the possibility of a distribution of surplus

Trustees will need to continue to meet other ongoing responsibilities (maintain member records and accounts, meet disclosure requirements, hold trustee meetings)

(NB 6 marks available for drafting — well structured, jargon-free answers with suitable introduction / summary or conclusion should score maximum or close to it.)

Question (i)

Overall, the marks for this part of the question were perhaps surprisingly low for what was basically a series of book-work based questions.

Drafting was generally of a good standard, with most candidates helpfully sticking to the structure suggested by the question and answering in clearly headed sections. Even so, some candidates found it difficult to maintain the quality of their drafting throughout the entire question. Persistence definitely paid off. There was a sense that the quality of candidates' answered tailed off towards the end of part (i).

Detailed comments on each bullet point are as follows:

Part (a)

Candidates generally did well at listing employer responsibilities and powers but found it much harder to list those for members.

Part (b)

This part was generally answered well.

Parts (c) and (d)

These parts waere less well answered and candidates missed out on lots of easy bookwork marks.

Part (e)

Candidates picked up the obvious marks easily but failed to work harder for the other marks available.

Part (f)

Arguable the hardest part of the question, but one which candidates did quite well on.

(ii) **Relevant legislative contraints and professional guidance**

- Section 67 of Pensions Act 1995
    - Requires trustees to obtain members' consents to any modification which would affect benefits or entitlements accrued in respect of service before the modifcation
    - Actuary is asked to certify that changes would not adversely affect accrued rights
    - in practice, this means you can't reduce past service benefits
    - or alter the form of them i.e. the employer can't force members to switch existing benefits to a defined contribution basis

- MFR / Debt Regulations
    - Certification of a debt on the employer if the current scheme is wound-up in deficiency
    - Liabilities calculated in accordance with GN19
    - Cost of purchasing immediate annuities for current pensioners, paying cash equivalents for other members, and meeting the expenses incurred in a wind-up
    - May require the employer to make an additional, significant lump sum funding payment to meet the liabilities certified

- MFR / GN11 Cash Equivalents
  - Minima for any transfer values paid
  - Always applies, but relevant, in particular, if members are given the opportunity to transfer funds from the current scheme to the new defined contribution arrangements

- GN16 on Bulk Transfers from Retirement Benefit Schemes
  - Requires actuarial certification of bulk transfers of members' entitlements without members' consents
  - Actuary has to be sure that members' will be awarded benefits broadly no less favourable than those being given up in the current scheme
  - …and that there will not be a significant loss of security
  - will effectively make it impossible to force members to transfer accrued benefits out of the current scheme into a new defined contribution arrangement

- Contracting-out requirements
  - different basis (Protected Rights) for defined contibution schemes
  - few new DC schemes choose to contract-out as rebates are not generally considered to be good value
  - employer (and members) will have to pay a higher rate of National Insurance contributions if DC scheme is contracted-in

Question (ii)

Candidates failed to demonstrate a sufficiently good knowledge of the guidance notes and missed lots of easy marks.

(iii) **Costs of design options**

Revalued Average Earnings

Age Next	*Total Salary*	*Current PUC Rate*	*Approximate rate for 60ths of Revalued Average Earnings*	*£ cost for each age-band*
25 or under	1,100,000	10%	$10\% \times (1.025/1.045)^{45} = 4.2\%$	4.2%×1,100,000=46,200
26 to 35	2,600,000	13%	$13\% \times (1.025/1.045)^{35} = 6.6\%$	6.6%×2,600,000=171,600
36 to 45	4,500,000	16%	$16\% \times (1.025/1.045)^{25} = 9.9\%$	9.9%×4,500,000=445,500
46 to 55	4,600,000	21%	$21\% \times (1.025/1.045)^{15} = 15.7\%$	15.7%×4,600,000=722,200
56 to 65	2,200,000	26%	$26\% \times (1.025/1.045)^{5} = 23.6\%$	23.6%×2,200,000=519,200
Total	15,000,000	18%		(46200+…+519200)=£1,904,700

Combined contribution rate is $(1,904,700/15,000,000) \times 100\% = 12.7\%$ of Pensionable Salary

(NB Award 4 marks (3 + 1) if approximation is made using single age for switch — e.g. 18% × $(1.025/1.045)^{(65-45)}$ = 12.2% of Pensionable Salary)

Employer contribution rate is therefore (12.7% — 3.0%) = 9.7% of Pensionable Salary
Cash saving is (15.0% — 9.7%) × £15,000,000 = £795,000

Assumes uniform distribution by salary within each age-band (i.e. OK to use mid-point)
Ignores impact of early retirement, withdrawals, deaths which may occur in practice

Ignores impact of any promotional increases which may occur in practice

- "100ths plus flat-rate matching DC"

  Defined Benefit rate is 18% × (60/100) = 10.8% (all met by employer)
  Employer contributions to DC element depend on how much members choose to pay
  Assuming maximum member contributions are paid total employer contributions are 13.8%
  Cash saving is between (15.0 −13.8)% × £15m = £180,000
  and (15.0 − 10.8)% × £15m = £630,000
  Assumes benefits are adequate to pass the Reference Scheme Test so no extra costs

- Age-related DC to 45, 60ths of Pensionable Salary thereafter

Age Next	*Total Salary*	*Company Cont'n Rate*	*£ cost for each age-band*
25 or under	1,100,000	3%	3.0% × 1,100,000 = 33,000
26 to 35	2,600,000	6%	6.0% × 2,600,000 = 156,000
36 to 45	4,500,000	9%	9.0% × 4,500,000 = 405,000
46 to 55	4,600,000	18%	18.0% × 4,600,000 = 828,000
56 to 65	2,200,000	23%	23.0% × 2,200,000 = 506,000
Total	15,000,000		(33000 +..+506000)= £1,928,000

Cash Saving is (15% x £15,000,000 - £1,928,000) = £322,000

Need to also consider cost of any extra benefits introduced alongside the DC bit e.g. spouse's death in service pensions
Ignores any additional costs associated with contracting out/in for DC section

Question (iii)

Most candidates had a good attempt at the arithmetic and scored highly. Career average design caused the most problems and some candidates struggled to work out the rate *correctly. Lots of candidates made elementary errors around the member contributions being included or excluded.*

(iv) **Pros / cons / limitations to ABC PLC**

Revalued Average Earnings

- Appears to reduces level of costs significantly
  - assuming salary increases for ABC employees > inflation

- removes salary inflation risks

- it's not DC (given that the workforce is sceptical)

- accrued benefits can be linked in same way

- it doesn't do anything about other Defined Benefit risks
  - still exposed to increased life expectancy
  - investment risks
  - and inflation used for revaluing salary/past benefits may be higher than assumed

- may give better benefits / increase costs for some employees (if salary falls away near retirement)

- actual experience (e.g. withdrawals) may reduce the calculated saving

100ths + up to 3% matching

- Fairly minimal cost reductions if members maintain current contribution rates
- But removes some employer exposure to various DB risks
- i.e. shares investment, longevity, salary risks more with members, by passing it to them on the DC top-up
- Reduces costs for those members who value pensions less — i.e. targets company expenditure on those that appreciate it most
- It retains a core DB element so maybe an easier sell to existing workforce
- May increase costs in respect of early leavers e.g. reduced withdrawal profits
- Also limits the upside risk and ability to benefit from surplus, however
- Additional admin requirements and costs — some argue "worst of both worlds"
- May have some contracting-out issues
  - Will need to re-certify RST if scheme remains contracted-out as currently

DC to 45 / DB thereafter

- Appears to achieve some cost reductions
- Similar benefits and limitations to previous option, but risks are shared differently
- Younger members typically have greater promotional salary increases; this design transfers the salary risk for this period to members
- Relatively generous DC benefits for younger / mobile employees may be attractive
- …and retains current benefits for older employees so less difficult to sell
- Some implementation issues — would someone who is currently, e.g., 42 switch to DC for 3 years and then back to current scale?
  - A window from age 40, say, would seem reasonable, but would reduce the saving
  - Similar issue would apply for new hires at ages just below the cut-off

- Would also need to consider whether DC members are contracted-in or out
  - Few new occupational DC schemes are contracted-out (rebates poor value)

  - If contracted-in, employer will pay higher NI contributions
  - May need to adjust employer contribution rates to maintain the level of saving

Question (iv)

Definite feeling that candidates were running out of time by this section - poor planning/ overrunning on part (i) probably to blame.

Many failed to link back to the results in part (iii).