Subject ST4 — Pensions and other Benefits Specialist Technical

September 2009 examinations

EXAMINERS' REPORT

Introduction

The attached subject report has been written by the Principal Examiner with the aim of helping candidates. 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.

R D Muckart
Chairman of the Board of Examiners

December 2009

Comments for individual questions are given with the solutions that follow.

The standard of solutions for this exam was somewhat lower than the examiners were expecting. Often this was because candidates ignored the instruction in the question and simply listed their standard points on any topic even where discuss or describe had been asked. Such an approach is unlikely to be successful.

Possibly in an attempt to avoid repetition, which has been commented on in earlier reports, the examiners have noticed a move towards writing at length on minor or even irrelevant issues. The examiners are looking for candidates to demonstrate an understanding of the key issues.

Handwriting is not always as clear as it could be and the problems caused by poor handwriting are compounded when combined with poor/cramped layout to solutions.

Turning to our comments on each question:

1

(i)

- Consider degree of prudence required.
- Determine base table
- If sufficient historical data to be statistically credible, use this to produce scheme specific decrement tables, *or*
- use rates from standard tables
- .. adjusted to fit experience of scheme.

  When considering underlying data from past experience:
- Consider how changes in social and economic conditions will affect view of future
  - possible impact from abnormal fluctuations
  - changes with time
  - random fluctuations
  - changes in way data recorded
  - potential errors
  - changes in balance of homogeneous groups
  - use judgement and analyse fluctuations and trends
- Consider whether different assumptions could be used for different membership types e.g. Executives, office vs factory workers etc.
- Or group by location/pension amount (if credible)
- Derived rates need to be projected to allow for improvements up to current date and into future

  Decide on method of projections:
  - .. e.g. process based — model trends in cause of death
  - .. or extrapolate by projecting historical trends
  - .. allow for possible cohort effect
  - .. simplistic approach is to assume x% p.a. improvement

- .. stochastic approaches
- .. or reduced discount rate

- ..consider heterogeneity with group to which assumptions are to relate

(ii)

- Scheme data unlikely to be credible
- ..therefore use standard tables
- ..or rates underlying insurance company premium rates if annuities insured
- ..if available or can be deduced
- Project expected mortality into the future
- ..likely to use simplistic approach

Generally answered well.

2

(i)

- Member is likely to have information provided by the scheme trustees, e.g.:
    - announcements
    - booklets
    - past benefit statements
    - annual reports

So as an in service member, he/she could expect benefits

- based on service to date
- and with further accrual based on future service
- allowing for inflationary growth, so based on salary when reaches age 65
- without any reduction to reflect the funding position of the scheme
- and with any practice of granting discretionary increases to pensioners (if applicable) to continue when he / she reaches retirement
- and benefits at least equal in value to own historical contributions
- and with any options, e.g. commutation, early retirement, transfer values, continuing to be available.

(ii)

- Winding up process is in accordance with scheme documentation.
- and any applicable legislation
- It has been decided to pass risks to insurance company.

Benefits

- Starting point is leaving service benefit, so salary is at date of wind up not salary at age 65 (so salary link is broken).
- but winding up benefit may incorporate some level of revaluation in the period up to retirement (state what), in lieu of future salary increases
  e.g. as though had left service.

Funding

- Unfortunately, assets are sufficient to purchase only 50% of leaving service benefits from insurance company on this basis.
- Cross reference to latest published funding position, e.g. on funding basis / discontinuance basis which shows figures and caveats.
- Comment on any changes in financial conditions which might have changed / worsened the position.
- .. e.g. fall in equity markets, reduction in interest rates, changes in insurance market
- State obligation, if any, of company to make up some or all of any shortfall.

Security

- State that benefits now guaranteed by insurance company, and not subject to market, and employer's covenant
- ..what protection available if insurance company runs into difficulty.
- State any options available following wind up, e.g. TV, early retirement, commutation.

This was quite poorly answered with most candidates concentrating their solution to part (ii) on the insurance company's pricing basis. Answers to part (ii) should have concentrated on points suitable for passing on to a member.

3

(i)

- Contributions: Full / partial tax relief for employer and / or employee.
- Investments: Dividends and growth exempt from tax, or lower tax rate.
- Benefits: Income / lump sum exempt from tax, or lower tax rate.
- Perhaps subject to maximum limits.
- Compulsory minimum contributions: employees, employers (on behalf of employees).
- Compulsory minimum benefits or values sponsored by employer, or by individuals through insurance.
- Maximum charges by managers of benefit provision.
- Educate employers and citizens on need for good pension provision.

- Reduce or remove any state pensions.

(ii) **Funding**

- require advance funding
- impose minimum funding requirements
- require assumptions to be prudent eg little or no allowance for asset out-performance in financial assumptions
- requiring schemes to hold additional capital to absorb market shocks
- regular checks on adequacy of funds

Security of assets

- segregation from sponsor's other assets
- trustee control of funds
- authorisation for management or investment of funds
- restriction on types of investments

Additional security

- financial guarantees from sponsoring employer
- insurance against inadequacy of funds due to malpractice
- letters of credit from bank
- minimum credit rating from organisations managing scheme finances
- compensation fund, funded by levies
- supervision of finances / marketing practices of commercial benefit providers
- outstanding benefit obligations as high priority in case of company insolvency

Other

- establish regulatory body
- benefits available if employees leave service
- regular disclosure of information to members
- reporting bad practice to state regulator

A bookwork question which was well answered by most candidates.

4

Level of annuity

- Currently the level of annuity for each member will depend on insurance company terms at the date of each retirement.
- The scheme will now need to set its own annuity terms
- Might want to restrict choice e.g. pension increases, dependant's pension

Need assumptions for:

- Future mortality
- Allowing for possible future improvements in mortality.
- Future returns available to match annuity payments.
- Typically based on the returns expected from suitable government securities or corporate bonds.
- Decision on whether to offer unisex or sex specific terms.
- Possible allowance for administration expenses

Monitoring

- In relation to pensioners, scheme becomes defined benefit
- Regular monitoring of the balance of assets and liabilities and of future cashflows will be required
- to ensure that there will be sufficient assets to meet annuity payments when due.
- There needs to be a process to remedy any deficits
- .. e.g. a schedule of payment by the company to the scheme
- .. and hence consideration of any covenant issues.
- Or deal with any surpluses
- .. e.g. distributed to the company, if permitted by legislation
- .. and / or to the members (e.g. as an increase to the annuity in payment)
- .. or as a lump sum, if permitted by legislation.

Investment

A decision will be required on the investment of the assets held in order to:

- match the term and nature of the pension liabilities
- balance risk with return
- typically government securities or corporate bonds
- ..with appropriate coupon, term, and rating
- Could construct suitable swaps portfolio to match expected cashflows but likely to be expensive
- ..but possibly other types of assets, e.g. equities
- as proxy hedge against uncertain mortality improvements
- ..or in respect of any surplus in the fund

- Consider longevity bonds.

Regulatory / legislative

- The approach to be adopted will need to satisfy regulatory and legislative requirements. e.g. with regard to disclosure in relation to:
  - to the investments held
  - the returns achieved
  - the risks taken
  - the level of solvency
  - including any funding plan
  - the treatment of any surpluses
  - consider professional guidance.

Other

- The size of the scheme and hence the volatility of the mortality experience
- which would be increased by self-insurance.
- member could have option to insure pension, if desired
- trustees should explain risks to member (not "guaranteed" like insurance)
- consider why FD has suggested this
- Trustees main concern is member security

It appeared that only a minority of candidates realised that the main point to address was that the scheme would effectively become defined benefit post retirement with the corresponding monitoring and investment requirements. Many candidates repeated the points they had made in Q2 on how an insurance company would set their annuity terms.

5

(i) Impact on DB schemes

Members

Benefits affected

- revaluation in service
- revaluation between leaving and retirement
- escalation in payment

- **Higher absolute levels of benefits if amounts are linked to inflation**
- directly, if increases linked to appropriate indices

- indirectly, if salary increases are relative to inflation

- **Lower real levels of benefit if benefits are non-increasing**
- or fixed below level of inflation
- or if cap applies to level of inflation
- or salary increases not tied to higher inflation
- Unless sponsors can be persuaded to top up benefits on a discretionary basis

- **Possible reduced security due to**
- reduction in employer covenant if recession occurs
- reduced funding levels …
- … due to higher benefits / low (negative?) investment returns
- ultimately possibility of losing job if higher contributions to DB scheme tip company into insolvency

- **Possible benefit reductions due to financial pressures on sponsors**
- future accrual reduced
- increased member contributions
- scheme terminated, only vested benefits
- non payment of discretionary benefits
- less than 100% cash equivalent transfer values

Sponsors

Effect on funding

- reduced surplus / increased deficit possibly meaning higher contribution requirements
- or higher risk based levels to any cdf
- higher cost of future accrual,
- as benefit increases are either higher than assumed or unaffected,
- likely to be lower investment returns than assumed.
- May take some time to emerge depending on next formal valuation
- .. when financial assumptions may be strengthened.
- May be sooner if there are trustees actively monitoring funding levels …
- …or covenant of employer deteriorates
- …or statutory triggers.

Investment strategy

- May encourage investment in riskier asset classes in pursuit of higher returns.
- Which in turn increases volatility of funding levels and contribution requirements
- Or Company may seek less risky assets to reduce future volatility.
- Increased cost of benefits in company accounts

(ii) *Impact on members of DC plans*

- Past projections of retirement income unlikely to be achieved.
- Reduced purchasing power / higher annuity costs leads to a "double whammy".

Due to:

- Lower actual investment returns will reduce funds available to secure pension at retirement.
- If yields on bonds fall, increases cost of securing benefits at retirement.
- If expected longer-term inflation is higher, may also increase cost of securing pension at retirement (if pension increases linked to inflation).
- So, lower benefits for those approaching retirement, unless invested in assets which closely match annuity costs.
- Increased expenses as providers seek to recover increased costs.

Other possible effects

- Company may seek to reduce costs by reducing pension contributions.
- Perhaps reduced member contributions (where members have the choice) due to:
  - need to meet high increases in cost of living (utilities, fuel, food)
  - perceived poor value of DC plans.
- Or higher member contributions to maintain previous expectations (if this can be afforded),

Often candidates did not state the obvious points. Too many failed to include any discussion on the issues they identified for part (i).

6

Scheme design

- Different territories may have different employment practices, e.g.:
  - the split of staff between part time / fulltime,

  - permanent / contract,
  - different make up of salary (basic / bonus).

The current scheme basis may not culturally fit local conditions

- ..e.g. if it assumes a stable pattern of earnings which peak towards retirement
- ..or if it is dissimilar to the benefits offered by competitors
- ..or the balance of benefits between in service / left service / retirement does not fit local needs
- .. or a certain part of the benefit package turns out to be too expensive
- ..such as significant death benefits provided in a territory with poor health care.
- May not be easy to tweak scheme basis to cover financial conditions e.g. inflation, in all territories and currencies
- ..e.g. revaluation of benefits pre retirement, increases in payment
- ..so might need to end up with different benefits in different territories.
- Different territories may have different social security systems.
- There may be an opportunity to "contract out" of state arrangements in some territories

Funding

- To assess long term costs need to set financial assumptions
- ..and demographic assumptions
- .. but suitable demographic data may not be readily available for all territories
- ..and will need assumptions about likely take up from employees
- ..and funding method.
- Arrange calculations for likely long term increase in costs to employer
- ..offsetting any saving from cancelling existing arrangements.
- Decide on whether to offer past service credits for those previously excluded
- If scheme can contract out of state arrangement
- ..this might lessen the cost of extending the scheme membership and so the cost to the employer.
- Similar calculations to assess likely affect on employees.

Investment strategy

- Would need to be reviewed so as to consider how to match assets with liabilities
- in different territories and different currencies
- and consider whether to earmark investments in different territories / currencies
- if permitted or required by legislation / regulation.

OTHER

Regulation

Different territories are likely to have different requirements:

- e.g. over solvency funding
- treatment of surpluses / deficits
- disclosure requirements
- taxation
- minimum benefits, increases etc.
- Discrimination laws
- ..it may not be possible to accommodate all these (possibly conflicting) requirements within one scheme.

Legislation/ documentation

- The different legislative requirements in different territories may result in complicated scheme documentation / announcements / disclosure documents
- ..possibly needed in different languages / formats to suit local conditions.

Communication

- There would need to be a communication process, possibly on many sites and in different countries.

Existing arrangements

- If employees join the scheme for future service, need to consider transitional arrangements to deal with any existing arrangements.
- ..e.g. whether to allow existing employees the option to continue with these, and for how long.

Covenant

- Likely to be even more important to monitor it as scheme size will grow.

Administration

Need satisfactory processes to:

- collect and invest contributions
- maintain records
- pay benefits
- arrange common computer systems

- taking account of local issues such as different currencies
- ensure security of member data worldwide.

There was little evidence that candidates had thought about the scenario outlined in the question with many missing the international aspects so did not address the suitability of the scheme for local needs. Some candidates limited their points on funding to a list of the alternative methods and didn't consider how the assumptions might be set.

7

(i) **Rules and legislation**

- What do the scheme rules require?
- Compliance with any legislative requirements
- e.g. age discrimination, sex equality.

Type of basis

- Are the terms to be cost neutral.
- Or should TV be less than expected cost of providing benefit within the Scheme.
- Should the terms be fixed or market related.
- Pragmatic scales / ease of administration

Employer

- Consider employer objectives
- e.g. encouraging early retirement to reduce active workforce.
  Or encourage commutation to reduce risks.

Considerations

- Uni-sex or sex dependent rates.
- Allowance for discretionary benefits
- Eligibility criteria.
- Why has take up of TVs and early retirement been so low.
- Competitor's rates.
- Member's expectations.
- Value for money for previous TVs in.
- Expenses of calculation and payment.
- Consistency of transfer out and transfer in terms.

Assumptions

- assumptions will need updating regularly, these include:
  - mortality assumption
  - interest rate assumption
  - pension increases
  - consider any reduction for underfunding
  - actuarial neutrality / equation of value
  - allowance for taxation in commutation factors

Practical issues

- Timing of new factors
- Communication of change
- Any contractual issues

(ii) *Allowance in funding*

Need assumptions for

- amount of pension commuted or cash taken
- conversion terms

Amount

- could be zero (i.e. no allowance is made for commutation)
- could be maximum amount allowable or something in between
- degree of prudence depends on whether the conversion terms are equivalent to the value of the pension given up
- e.g. if terms are such that lump sum is less valuable, assuming no lump sum is taken is the most prudent assumption

Terms

- current factors could be used
- or it might be appropriate to allow for them to increase as longevity improves
- if commutation terms are market related (but not necessarily equivalent in value to pension on funding basis) then simple adjustment might be made to value of pension

(iii) *Analysis of Surplus*

- For each member who retired since the last valuation.

- Compare the amount of cash taken with that assumed.
- If different, consider contribution to surplus or deficit.
- Depending on whether terms are less / more valuable than pension respectively.
- Sum across all members who retired between valuations.
- If individual analysis impractical (very large scheme and/or poor data), then approximate methods may be acceptable.
- e.g. identify total commutation lump sums paid from accounts
- and work back using typical terms to approximate contribution to funding position.

Uses

to review commutation assumptions — consistently large amounts in analysis suggest reviewing:

- assumptions (unless basis deliberately prudent), or
- terms (are factors too generous / penal to members)
- to set/justify assumptions for other valuations e.g. if best estimate required for accounting even though not allowed for in funding
- need to be sure that we have credible amounts of data

(iv) *Cost impact*

- The commutation terms are not currently offering full actuarial equivalence for the pension surrendered so there is a "gain" when pension is exchanged for cash.
- Improving the commutation factors will reduce this gain
- but may actually increase the total amount of pension exchanged for cash
- so the overall cost of the scheme may actually reduce.
- So improving the transfer value and early retirement bases may continue to generate profits on the funding basis
- However legislation may restrict terms to at worst the "best estimate cost" so maybe no change to expected long-term cost.
  Administration expenses may increase if more quotations.

(v) *What are terms under which ill-health ER might apply?*

Eligibility

- Consider any statutory requirements.
- Is ill-health retirement option to be a right, or a discretion for trustees / sponsor?
- Set terms for eligibility for ill-health benefit .. e.g. minimum age, e.g. 25 / 30?
- May wish to apply a minimum service qualification, e.g. 2 years?

Evidence

- What evidence of health is required to be eligible for benefit?
- .. e.g. independent certification by company doctor / own doctor?
- .. inability to carry out own job / any job? (or any other appropriate definition).
- Is continued monitoring / certification required after benefit starts, e.g. on an annual basis.
- Should the trustees introduce medical evidence / declaration for new scheme members to screen out potentially expensive early claims.

What should basis be for calculating benefit payable?

- Different (e.g. lower) accrual rate to main benefits?
- Based on accrued service only?
- or including some or all potential service?
- Perhaps depending upon extent of ill-health.
- How does basis compare to that for normal early retirements e.g. expectation for ill-health basis to give higher level of benefit
- Could compare to cash equivalent transfer value
- Consider level of dependants' benefits

Funding/long-term cost

- Need to consider effect on the employer's long term costs
- Is any historical data available from company records or from general industry data.
- Should the trustees increase employer or employees' contribution to scheme to offset additional costs by reserving for potential claims
- or should the company top up the fund when a claim arises
- or can such a risk be insured in whole or in part.

What disclosure / Scheme documentation is required?

- Determine the extent to which the underlying basis is to be determined in advance and disclosed to scheme members e.g. in announcement / booklet / rules.

Some candidates distracted themselves in part (i) by writing (at length!) about liquidity and cashflow issues if the take up of transfer values and commutations increased.

For parts (ii) and (iii), most candidates included the basic issues but did not expand their answers sufficiently.

Part (iv) was answered particularly poorly as it required some thought beyond the immediate. Other candidates ignored the question and chose to discuss the effect on the risk profile of the scheme.

For part (v) most candidates appreciated that medical evidence would be required and that the terms could be more generous to reflect the shorter life expectancy.

END OF EXAMINERS' REPORT