EXAMINATION

September 2006

Subject ST4 — Pensions and other Benefits Specialist Technical

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.

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Chairman of the Board of Examiners

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General comments

Overall the standard was disappointing. In the main, this was due to a combination of:

- *not reading questions carefully, even worse assuming a questions is the same as seen on past papers*
- *assuming UK practices apply*
- *failing to write enough separate points; and*
- *an inability to apply knowledge to a (slightly) unfamiliar situation*

Comments on individual questions

Q1 *Reasonably well answered, but some candidates forgot their audience — most trustees would not appreciate a long description of stochastic models or the Wilkie model.*

Q2 *Many candidates did not distinguish between costs and expenses and therefore wasted time by going into detail on the costs of providing DB benefits. A surprising number suggested that using a weaker funding basis will lower scheme expenses.*

Q3 *Most candidates failed to pick up enough points as they did not expand on the main themes.*

Q4 *Reasonably well answered, but many candidates assumed this was the standard "options" question. The answers to part (ii) lacked detail, with many candidates just considering insurance options.*

Q5
- *(i)* *Candidates who sent down the route of comparing the main risks for each scheme (e.g. investments, mortality, etc.) did reasonably well.*
- *(ii)* *Only the better candidates considered how the various assumptions might be set for each scheme, rather than just churning out their pre-prepared list of assumptions.*

Q6
- *(i)* *Most candidates assumed that income drawdown would be a temporary arrangement, with annuities being purchased at age 75. it was not uncommon for candidates to believe that income drawdown means withdrawing* ***all*** *the income generated by the assets.*
- *(ii)* *Generally well answered.*
- *(iii)* *The examiners were surprised that some candidates did not seem to realise that option 2 would introduce risks for the employer.*

Q7
- *(i)* *Poorly answered, with too many candidates just giving a list of key assumptions without thinking if they were relevant. Only the better candidates noted that assumptions relating to spouse's benefits were not required.*
- *(ii)* *Given the marks on offer, candidates failed to write down nearly enough. Indeed, many wrote more for 7(i) than 7(ii). Several candidates suggested that improving the commutation rates would worsen the funding position, but did not go on to explain that this would only arise if the funding basis took advance credit for future commutation profits.*

1

- The purpose is to assess the risks and rewards of adopting different investment
- strategies to meet the liabilities
- and obtain an appropriate balance between them.
- Consider the funding target to which the risk is to be considered
- over an appropriate time period
- e.g., x% probability that the funding target will be met at all valuations over the next y years.
- An ALM uses all data for regular funding valuations,
- with details of options and guarantees.
- Uses suitable model for projecting future cashflows
- based on best estimate assumptions
- in combination with a model for the demographic elements (e.g. mortality, pattern of retirement etc.) that is usually deterministic (i.e. tables derived from a combination of industry data and the experience of the scheme itself).
- The methodology considers a large sample of possible cashflows/simulations
- to estimate the probability of future events in the life of a scheme
- e.g. to indicate the probability that funds will be insufficient to meet funding targets
- by assessing the probabilities associated with alternative investment strategies.
- The relative risks (i.e. the probability of holding insufficient funds) can be assessed against the possible rewards (i.e. the probability of holding large funds, or the chance of reduced employer contributions)

2 (i)

- Internal staff responsible for administration eg interfacing with the payroll system, updating the pensions scheme records, making benefit payments, paying death claims, transfer values.
- Internal staff responsible for other, e.g. legal, IT, actuarial, investment
- Communications: booklets, announcements, benefit statements, details of benefits just before retirement, details of options, member counselling, presentations to members / prospective members.
- Trustee meetings, expenses, training.
- Cost of collecting contributions,
- e.g. from members, participating employers.
- External advisers, e.g. benefit consultants, legal, actuarial, auditors, investment managers.
- External fees, e.g. regulator, government, levy.
- IT system to link with payroll system.
- And cost of upgrading for scheme improvement / legislative requirements.
- Maintaining bank accounts.
- Investment expenses.
- Rebroking insurance policies if used.

(ii)

- Simplify the benefits provided by the scheme
- so as to reduce the cost of administration, communication, detailed correspondence with members, maintaining and updating IT systems, etc
- or by reducing the options available
- or reducing the frequency of providing benefit improvements such as discretionary increases in payment.
- Provide members with the necessary factual information at the minimum level required by legislation
- charge members for transfer quotations
- and withdraw any facility for free advice / counselling.
- Reduce the number of trustees to the legal minimum.
- Consider outsourcing significant elements of the scheme administration
- if cost reductions can be made for the (new) scheme basis.
- more computerisation
- Review role and scope of external parties
- such as advisors, auditors
- obtain market quotations for the (new) package of services required.
- Simplify the investment strategy.
- e.g. by investing in tracker funds.
- Close the scheme to new members
- so avoiding the need to provide information to new employees.
- consider email correspondence with members

3 (i) **Advantages**

- Employer can offer a DB arrangement, which may not otherwise be cost effective / viable if restricted to his own potential employees.
- Competitors – scheme sets benchmark – easy transfers between participating employers
- Saving in expenses / costs resulting from economies of scale:
- e.g. for record keeping, advisors / trustees / legal / audit
- The impact of scheme experience for particular members or groups of members would be averaged over a larger group
- so leading to less volatility in the contribution rate.
- The cost of death in service benefits (as % of payroll) should be lower for a larger group of lives
- e.g. by taking out a profit share arrangement with an insurance company
- or by allowing the scheme to self-insure.
- A larger group of lives should enable the scheme to negotiate improved “free cover” terms (i.e. insurance without evidence of health) with an insurance company.
- There will be a bigger pool of assets to invest
- giving more scope for diversification in the investment strategy
- and more scope for the scheme to manage its own assets
- as opposed to a pooled investment arrangement

- with savings in investment costs as % of funds under management
- could facilitate movement of employees between participating Employers.

Disadvantages

- Cross-subsidies arising from the impact of unfavourable scheme experience
- e.g. other companies giving higher salary increases.
- Employer may be unable to influence choice of advisors
- or investment medium / asset distribution etc.
- or changes in the scheme benefits
- e.g. an increase or reduction in the pension age, or the rate of increase of pension benefits in payment.
- Viability / costs of scheme may be affected by factors outside individual employers control.
- e.g. if employers with a below average age profile cease to participate.
- good pay for bad if one employer defaults

(ii)

- All proposed enhancements reported to the scheme actuary
- who will recommend a schedule of payments
- to be made in full before the enhancement vests.
- Scope to cut back the enhancement if payments not made in full.
- Veto the enhancement if the funding position of the scheme is poor
- and cost of augmentation not paid for in full when granted.
- Request medical evidence if there is any possibility of adverse selection against the scheme.
- Financial limits on the cost of any one augmentation, or a group of augmentations for any one individual employer.
- Obtain agreement of all other employers.
- Check if any impact on scheme’s investment strategy,
- e.g. due to changing cash flow requirements for enhanced early retirements.

4 (i) **Who should be covered / possible restrictions, e.g:**

- Spouses
- Partners: opposite sex, same sex
- Children
- age limits, e.g. if in further education or financial dependence.
- Other family members
- e.g. need to be financially dependant.

Benefits

- Integration with state
- Level of benefits on death pre-retirement
- or death post-retirement
- or on other events / circumstances.
- Consistency with benefit basis for members
- e.g. if salary / service related etc.
- How payable: cash, pension, or both.
- Members appreciation
- Any reduction for large age disparity between member and dependant.
- Whether benefits cease on remarriage.
- Option to exchange member's pension for dependants' pension
- or vice versa.
- How to deal with any selection issues, eg if member in poor health.

Admin issues

- Nomination / expression of wish forms
- with regular communication with members to ensure these are kept up to date.
- Methodology for determining who to pay benefits to
- and establishing method for dealing with disputes between different beneficiaries.
- Record keeping
- Consider requesting evidence of health for new scheme members.

Costs

- Likely level of costs and future trends in the cost.
- Split of costs : company / member.

Insurance

- Consider availability of insurance to (re)insure benefits
- especially any large risks
- and so as to get a free cover limit.

Other

- What equivalent benefits competitors are providing.
- Offer as part of flexible benefits package?
- Legislative requirements
- e.g. maximum level of dependants' benefits
- or a requirement that benefits can only be provided in certain circumstances,
- such as a requirement for financial dependency.

(ii)

- Medical evidence for all new members and or 'actively at work' clause
- and / or increments in benefits.
- medical evidence unlikely to be appropriate for existing employees
- (Re)insurance of all or part of the benefits with an insurance company on a non-profit basis
- or a experience rated / profit sharing basis.
- Purchase of an annuity with an insurance company
- to protect against changing financial conditions
- or improvements in longevity.
- Record keeping to avoid disputes over eligibility for benefits.
- Regular benefit statements detailing benefits covered.
- Provision of benefits is at trustees or employer's discretion
- e.g. in respect of non spouses

5 (i) **Risks (funded – *F*))**

- The employer bears all the risks.
- So if experience is unfavourable, he pays more than expected
- though he may be able to recoup some of the additional costs from extra employee contributions
- or by changing the scope of the scheme
- or by discontinuing the scheme
- subject to possible legislative requirements on an employer to make up some or all of a deficit on discontinuance.
- In the extreme case, poor scheme experience could put the employer out of business if scheme can't be afforded
- legislation changes might increase costs.

Risks (Unfunded-*U*)

- The risks are borne by the country at large.
- If experience is worse than assumed the sponsor can increase general levels of taxation
- or borrow money against the country's future growth / prosperity
- or reduce the benefits
- such as an increased pension age.

Credit was given for the alternative approach of looking at each risk and how they differed between the two arrangements

(ii) **Data considerations *F***

- Most relevant employee data available from payroll system/individual data
- or by asking employees
- e.g. regarding marital status
- though need to ensure it is kept up to date.

- Need to keep in contact with retirees / former employees to ensure correct benefit payments.

Data considerations *U*

- If available, use data from current and past contributing members.
- If full individual data not available, use population statistics
- or sample data.
- Take steps to ensure that only individuals who have contributed are eligible for benefits
- and that the benefits granted correlate with historical contributions.

Actuarial assumptions *F*

- Salary increase assumptions should relate to the particular industry
- taking account of any local factors.
- Demographic assumptions based on suitable industry data.
- Investment returns should take account of the investment opportunities in the local market,
- and the opportunity for overseas investment
- and the required investment mix
- which depends on the matching of assets and liabilities
- and the risks that the employer wishes to take
- allow for any legislative restrictions/boundaries.

Actuarial assumptions U

- Assumptions relate to the economy as a whole
- e.g. wage inflation.
- The current and likely future rate of employment.
- Demographic trends, such as changes in life expectancy, rate of ill-health retirement, number of marriages, number of children, migration, economic activity rates.
- An investment assumption only needed to the extent that a contingency reserve is built up to maintain cash flows, to smooth the costs to members and their employers to allow for changing demographics.
- Investment assumption to take account of the expected return on monies invested on the local economy and expected growth in the economy.

Funding objectives *F*

- Advance funding with aim of providing
- security of accrued rights on ongoing basis
- and discontinuance basis
- with stable contribution rate, subject to periodical review.

Funding objectives *U*

- Enough funds to pay benefits as they fall due.
- Stable contribution subject to periodical review
- as a result, there is likely to be a contingency reserve built up
- which can be used to support unexpected additional costs
- and smooth the way towards a long term increase in contribution rates, should this be required.

6 (i) **Advantages**

- Funds can remain invested
- so member can receive benefit of returns from equities and property, say, from the invested funds
- which are expected over the long term to exceed those from bonds or cash
- with the ability to change the mix of investments
- if a greater or lesser level or security of income is required.
- On the member's death the residual fund can be passed on to dependants
- so avoiding a potential loss of capital if the member dies soon after retirement.
- Flexibility over the level of income that is taken each year
- subject to any legislative constraints.
- Some might have religious objections to annuities

Disadvantages

- If funds invested in equities or property, member bears risk of poor investment performance
- or volatile investment performance.
- Investment may be mismatched against the requirement for a steady stream of regular payments
- so investor risks the possibility that his income may need to reduce.
- Scheme member bears his own longevity risk
- so if he/she takes an regular income consistent with insurance company annuity rates, the invested fund may run out if she / she lives longer than implied by insurance company rates.
- Complex to understand/decide how much to draw each year

(ii) **To reduce risk of fund running out**

- Set minimum age for retirement.
- Maximum level of income, e.g. no more than that implied by insurance company annuity rates.
- Subject to periodical review of level of income in relation to invested funds.

To increase security of the underlying investments

- Minimum proportion of fund invested in fixed interest securities / cash.
- Restriction of the equity component to readily marketable investments
- such as listed shares rather than unlisted shares or property.
- Employee may be asked to pay part or all of the costs of monitoring out of his individual fund
- which would reduce the level of income which could be provided.

(iii) **Option 1**

Advantages

- Simplifies administration relative to current benefits
- Matches the liability.
- Protects company against improvement in longevity
- and changing financial conditions
- as the risks are borne by the insurance company.
- Insurance company responsible for payments, and deals with annuitants' tax coding.

Disadvantages

- Need to shop around for the best terms.
- If this involves an intermediary, then likely to involve expenses, e.g. commission.
- Contributes to insurance company profits.
- Potentially a poor return on the investment if the member dies soon after retirement
- depending on what guarantees / dependant benefits have been purchased.
- liquidity requirement — might have implications for investment strategy
- possibility of insurer default

Option 2

Advantages

- Funds can be invested to achieve the best expected investment returns.
- Avoids contributing to insurance company profits.
- Ultimate sponsor gains if member dies soon after retirement.

Disadvantages

- Need to regularly review factor
- Company not protected against unexpected improvements in longevity
- since annuity terms set at outset.
- Company bears risks if underlying investments not matched to annuity payments

- or if assets invested in investments which achieve a poor return.
- So funds held in respect of members' annuity may run out before he dies, leaving company to make up any deficit.
- Company responsible for annuity payments
- and suitable tax deductions.

7 (i) **Assumptions & benefits**

- Whether commuting pension for cash, or purchasing pension with cash, we need to determine the alternative benefits by setting up an equation of value, on a given set of assumptions:

- Cash ÷ Factor = Pension Purchased / Commuted

- The assumptions needed in each case are those required to calculate a single-life annuity:

  – Post-Retirement Investment Return
  – Post Retirement Mortality (member's only)
  – Need male/female split for unisex terms

- The key item of the benefit structure of the scheme is the level of pension increases in payment, which may be guaranteed, discretionary or a combination of both.

- Where increases are not specified as a fixed percentage amount per annum, further assumptions may be needed, typically:

  – The level of future price inflation, and

  – The impact of any maximum or minimum level of increase in any one year.

- The history of discretionary increases provided is important in determining the appropriate allowance (if any) to include in setting terms for commutation and augmentation.

- Are pension increases (guaranteed or discretionary) paid on pre or post commutation pension?

- If on pre-commutation pension, it is clearly inappropriate to include allowance for those increases in the commutation factor.

- Similarly, if pension secured by augmentation is treated differently from normal scheme pension, this should be taken into account.

- The impact of any guarantee on death (or certain period) may be built into the single-life annuity used in the equation of value.

(ii) **Should factors be the same?**

- As the same assumptions are required for single-life commutation and augmentations, the Trustee is asking a reasonable question.
- Need, however, to consider whether it might be appropriate to pick different assumptions.
- Trustees' have a responsibility to act in the best interest of all beneficiaries:
- Fairness to the member might suggest the same factors should apply.
- Consider the (theoretical) situation where a member purchases an extra £1,000 pension by augmentation at 60 using the factor of 20:1, and ……
- ….immediately commutes it at 12:1, getting £12,000 back for original investment of £20,000.
- Security of other beneficiaries entitlements might suggest otherwise.
- For commutation it is prudent to **minimise** the amount of cash given in return for each £1 of pension (or maximise pension given up to provide specified cash amount)
- i.e. use assumptions that produce "low" factors.
- For augmentation it is prudent to maximise the cost of securing each £1 of pension
- i.e. use assumptions that produce "high" factors.
- Unless scheme is extremely well funded (i.e. >>100% on solvency basis) so these are not issues, and it's in the interest of **all** members to make option terms as favourable as possible.
- The issue of selection could theoretically be used to justify different factors, e.g.
  - Members in poor-health would maximise commutation.
  - Members in good-health more likely to purchase pensions.
- In practice, selection is unlikely to be a major issue for commutation or augmentations.

Other issues

Member's Expectations

- If factors have been different historically, probably not an issue for members.

- Members likely to take cash as tax free.

- It can be argued that commutation is an option that members are not obliged to take, so there is no requirement for terms to be "fair".

- On the other hand there is the potential for dispute at some point.

- This would be avoided if commutation factors were increased

Funding Position of the Scheme/ Strength of Employer

- If commutation is anticipated in the funding valuation, increasing commutation factors will immediately increase disclosed liabilities / contribution requirements.

- If commutation is not allowed for explicitly, increasing the commutation factors is likely to reduce prospects for future favourable experience, increasing sponsor's costs in the long term.

- Therefore, the strength of the employer and its long term commitment to funding the scheme need to be considered.

- The sponsor should not unknowingly be exposed to significantly increased costs when options are taken up.

Trust Deed and Rules

- Possible, but unlikely that different factors are explicitly specified in rules.

- More likely that rules will state how factors are determined, and this might justify differences e.g.

    – Commutation factors determined from time to time by the actuary on a basis consistent with that used for determining employer contribution requirements

    – i.e. suggests "best estimate" assumptions, factors reviewed every 3 years.

    – Terms for augmentations are recommended on a case by case basis on assumptions consistent with market conditions at the time option is exercised

- i.e. suggests factors based on an immediate annuity basis or similar.

Legislation

- Tax restrictions on commutation terms may limit the factors to something below the “fair value” of the pension being commuted, even on a best estimate basis.

- Tax treatment of alternative forms of benefit

  - Commuted pension tax-free vs pension taxed as income — it can be argued that lower commutation factors can be justified on the basis that the equation of value should be carried out net of any tax involved.

  - Alternatives available for funds used for augmentation payment?

- Sex-equality legislation

Miscellaneous other issues in determining option terms

- Frequency of use of each set of factors.

- Non-standard circumstances where standard factors may not be appropriate:

  - trivial commutation
  - Ill-health commutation

- Administrative issues should not be significant, other than that using the same factors will be simpler.

END OF EXAMINERS’ REPORT