EXAMINATION

April 2007

Subject SA4 — Pensions and other Benefits Specialist Applications

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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Comments

Overall the standard of candidates was broadly in line with recent diets, although it was disappointing that many did not demonstrate that they understood how to apply their knowledge to the specifics of the question. As expected, most candidates were well prepared for the bookwork questions.

There continues to be evidence that candidates are not reading questions carefully and either do not write enough distinct points to reflect the marks available or provide disproportionate detail.

Particular points on each questions are set out below:

Q1 *(i)* *Very few candidates covered the general funding principles.*

(ii) *Many candidates seemed to suggest that the Trustees would do their own analysis to determine each individual assumption (eg withdrawal, mortality) and did not think to extend their comments to the broader issues (eg prudence) that Trustees need to consider.*

(iii) *Generally poorly answered, many candidates simply stated the general uses of Asset Liability Modelling without considering how the results could help Trustees in light of the new SSF requirements.*

(iv) *Candidates split into two camps, those who were comfortable with mismatching reserves and those with little, if any, knowledge.*

Q2 *(i)* *It appears that some candidates do not understand how revalued career average benefits operate and the examiners would encourage a deeper understanding here. Quite a few candidates lost marks for arithmetical slips which might have been corrected if a general test for reasonableness had been applied.*

(ii) *It was surprising how many candidates appeared to dismiss the final salary option as it does not provide twice the future service benefits.*

(iii) *Many candidates seemed to misread this question and simply set out the advantages and disadvantages of the three designs without considering why the employer might be offering all three options. Many candidates wrote at length on the relative challenges of implementing each design (administration, communication, etc) which was not relevant given the employer was offering all three.*

(iv) *Perhaps, surprisingly, many failed to consider the cost issue for the employer.*

(v) *Very few candidates considered the PPF aspects that arise for this member.*

Q3 *This question was generally well answered, although insufficient points were made in connection with part (vii). In particular in this part, few candidates commented on the different effective dates of the IAS and funding calculations and the impact this could have. Candidates should note that it is not appropriate in a response to the Trustees to include accounting jargon with any explanation of why it would affect the numbers. For part (iv) some candidates did not appreciate that the new SSF legislation means that the balance of powers in relation to setting company contributions has changed.*

1 (i) General principles underlying scheme specific funding

General principles on funding

- the scheme is defined benefit in nature and therefore needs to make a series of cash payments in the future in accordance with an underlying formula
- the obligation of the scheme sponsor is to guarantee, as far as is possible, that these payments are made
- it is common for assets to be set aside in advance to meet the promise
- and the trustees have a role in ensuring that the assets held are sufficient to cover the accrued liabilities of the scheme

Scheme specific funding (SSF)

- the amounts that the trustees determine are required are known as "technical provisions"
- Assumptions used are not prescribed in contrast to prescriptive MFR which SSF replaces.
- Trustees and sponsor must agree a Statement of Funding Principles (SFP) which should include:
  - scheme's primary funding objective and any additional objectives
  - allowance for discretionary benefits
  - when future valuations might be undertaken
- If the assets held are less than the technical provisions, the trustees need to prepare and agree with the sponsor a recovery plan to make good the shortfall.
- The Recovery Plan (RP) should set out the method and timescale for eliminating the deficit, taking account of the following factors:
  - the sponsor's covenant
  - the asset and liability structure
  - the risk profile of the scheme
  - liquidity requirements
  - the maturity of the scheme
- If agreement on the SFP or RP cannot be reached with the sponsor (after going to mediation), the Trustees must involve the Pensions Regulator.

(ii) **How the Trustees should determine the assumptions and methods to be used in calculating the technical provisions**

- Trustees need to take actuarial advice
- on financial and demographic assumptions
- discount rate might reflect actual investment strategy
- possibly with allowance for how this will change in the future as scheme matures
- Trustees need to consider level of prudence required
- will depend upon covenant of sponsor

- at one extreme Trustees could choose to set the technical provisions at the cost of buying-out benefits with a third party
- although for a large scheme there may not be the capacity in the market to buy-out the benefits.
- Trustees may wish to aim for a self-sufficient position to reduce reliance on sponsor
- likely to lead to more conservative investment policy
- and thus lower discount rate which increases technical provisions
- mortality assumption important
- given this is a very large scheme, actuary will advise on tables that give good fit to recent experience
- but uncertainty surrounding level of future improvements
- Trustees should consider views of the sponsor
- and might have regard to the Pension Regulator's triggers

(iii) **How modelling can assist in establishing whether technical reserves are likely to be adequate**

- could use deterministic approach
- more usually, an asset model is required, which projects anticipated returns from the various asset classes held (or which might be held)
- on a stochastic basis
- similarly assumptions are required in relation to other items which will influence the amount and timing of benefit payments
- using such assumptions, the cash flows from the scheme can be generated
- and the probability of the technical provisions being sufficient to meet the associated cash flows assessed
- by varying the asset mix, an optimal strategy can be identified
- which maximises the probability
- and balances the certain return of lower returns assets
- against the more variable return of higher return assets
- the trustees might be expected to look for a high probability of the technical provisions being sufficient

(iv) **Discuss the possible use of investment matching reserves**

- once the technical provisions have been established, an implied necessary underlying rate of investment return will result
- this may be close to or equal to bond yields
- which, since they are low yielding, will increase the cost of the scheme
- the scheme sponsor may prefer that the assets are actually held assets which are expected to achieve a higher return
- but since they are more volatile, there is a risk that these higher returns will not materialise
- in such a situation, the trustees might wish to create a mismatching reserve
- to sit on top of the technical provisions
- — to absorb any such adverse fluctuations
- the size of the reserve would depend on the nature of the assets held

- and the asset model used to derive the size of possible short term fluctuations
- — the trustees would seek a high degree of certainty that the mismatch reserve would be sufficient to absorb any such fluctuations

Credit was given for candidates who approached this by thinking of the TPs having being set by taking credit for the expected higher returns from a riskier investment strategy. The additional reserve would then be used to reflect concern that these higher returns may not actually be achieved.

2 (i) **Expected pension at age 65**

Final Salary

$20/60 \times 30000 \times 1.045^{19} = £23{,}100$ p.a. (for 10% Ee conts)

Assumes Pension based on basic salary over final year

Revalued Career Average (RCA)

Accumulated revalued earnings is

$$\begin{array}{lllllll} & 30000 & \times & 1.045^0 & \times & 1.03^{19} \\ + & 30000 & \times & 1.045^1 & \times & 1.03^{18} \\ + & 30000 & \times & 1.045^2 & \times & 1.03^{17} \\ + & \ldots\ldots \\ + & 30000 & \times & 1.045^{19} & \times & 1.03^0 \end{array}$$

$= 30000 \times 1.03^{19} \times \{1 + (1.045/1.03)^1 + (1.045/1.03)^2 + \ldots\ldots.+ (1.045/1.03)^{19}\}$

$= 30000 \times 1.03^{19} \times \{(1 + i)^{20} - 1\} / I$ where $I = (1.045/1.03) - 1$

$= 30000 \times 1.03^{19} \times 23.024$

$= 1{,}211{,}200$

So, projected RCA pension is $1{,}211{,}200 / 60 = £20{,}200$ p.a.

Defined Contribution

Accumulated DC fund value is 20% of

$$\begin{array}{lllllll} & 30000 & \times & 1.045^0 & \times & 1.06^{19.5} \\ + & 30000 & \times & 1.045^1 & \times & 1.06^{18.5} \\ + & 30000 & \times & 1.045^2 & \times & 1.06^{17.5} \\ + & \ldots\ldots \\ + & 30000 & \times & 1.045^{19} & \times & 1.06^{0.5} \end{array}$$

$= 20\% \times 30000 \times 1.06^{19.5} \times \{1 + (1.045/1.06)^1 + (1.045/1.06)^2 + \ldots\ldots + (1.045/1.06)^{19}\}$

$= 20\% \times 30000 \times 1.06^{19.5} \times (1 + j) \times \{1 - 1/(1 + j)^{20}\} / j$
where $j = (1.06/1.045) – 1$
$= 20\% \times 30000 \times 1.06^{19.5} \times 17.526$

$= 327,600$

So, projected DC pension is

327,600 / 20 = £16,380 p.a.

Assumes 6% p.a. return is net of expenses

Assumes contributions paid on average mid-year and uniform investment returns

All approaches assume annual salary increases on anniversary of calculation date

(ii) **Which option would 45-yr old / £30K pick?**

If Value for Money (VFM) was not a criteria, the answer might be Final Salary, as this appears to offer the highest projected pension.

But this requires member to pay 5% extra contributions to secure the extra benefit of around £3,000 p.a.

DC calculations in (i) show each 1% of salary contributed would provide an additional £820 p.a. of pension (approximately).

So the extra benefit from FS over RCA only costs around 3.5% of salary on the assumptions used.

Suggests RCA option is better VFM than FS option

If member could top-up contributions to 10% under RCA & DC, projected pensions would be

RCA : 20,200 + 5 × 820 = £24,300 p.a.
DC : 16,400 + 5 × 820 = £20,500 p.a.

So DC option does not offer best VFM on these assumptions.

=> RCA option offers best VFM

(iii) **Factors that would lead to a different decision**

Why might member pick FS over RCA?

- Doesn't like change/trust employer's motives
- Fails to consider VFM at all
- Considers VFM but expects higher salary growth (relative to inflation) than assumed
- Is risk averse regarding future salary growth and happy to pay the "premium" to ensure standard of living is maintained at retirement
- Wants to maximise benefits but unclear on how/where to invest the extra 5% of salary on a DC basis
- expects to retire early, having enjoyed high salary increases over the next 10 years

Why might member pick DC over RCA?

- Expects higher investment returns than assumed (i.e. thinks assumptions are conservative)
- possibly having taken advice (alternative assumptions used, specific individual circumstances)
- Sophisticated risk tolerant investor who wishes to invest in high-risk / high return assets (assuming suitable choices available)
- Flexibility of DC is attractive e.g. single, no dependants
- Prefers a higher non-increasing pension
- Believes they can secure better annuity terms than assumed (e.g. smoker)

(iv) **Why the employer is proposing each of the options above**

General points about the range of options offered:

- FS retained to maintain employee relations (union pressure)
- …..and/or to retain key current employees (competitor practice)
- …..and/or paternalism towards longer serving, older employees
- RCA structure retains DB approach which employees typically like
- Can be good to give employees choice
- DC option gives cost stability to employer

Rough analysis of contribution rates for the specimen member:

	"Old" Final Salary	*"New" Final Salary*	*RCA*	*DC*
Employer Rate	23%(1)	18%(1)	20% (2)	15%
Employee Rate	5%	10%	5%	5%+
Total Cost	28%	28%	25%	20%+

(1) 23,100 / 820 ~ 28% total (approx), less 5% & 10% member contributions
(2) 20,200 / 820 ~ 25% total (approx), less 5% member contributions

- All options involves some cost reduction for the employer — that may well be the key objective
- but RCA reduces salary inflation risk to company
- DC removes investment (pre/post retirement)….
- ….and longevity risk
- Final Salary and RCA options are not "cost neutral" for the employer
- i.e. employer is seeking to mitigate the salary risk either by discouraging take up of the FS option…
- …..or charging the member a "risk premium" to retain the salary link
- This could be justified on the grounds that is possible to match inflation-linked liabilities for RCA with low risk assets (Index-Linked Gilts)
- Similar risk transfer arguments might lead us to conclude that DC option should have the highest employer contribution on offer…
- ….but this rarely happens in practice (remember likely cost reduction objective)
- Fear of selection if DC and RCA offer same employer contributions….
- ….i.e. younger members opt for DC, older members opt for RCA/FS

Other factors

- What competitors provide
- 15% DC rate might be the rate offered in a DC scheme offered to new hires (note this scheme was closed some years ago so reasonable to assume another arrangement exists)

(v) **Different considerations for long-serving, high-salary member**

- Cost of defined benefit likely to be much higher than DC rate offered,
- So, may be more likely to pick FS or RCA
- Will depend on salary growth prospects for last 10 years,
- …but note that difference between FS and RCA is much less as closer to retirement
- So more likely to pick RCA, unless expects salary increases >> inflation

But….

- Accrued pension is £30K
- Over PPF cap already
- consider funding position of scheme
- Consider employer covenant if poorly funded/weak employer, might have high risk of losing all future accrual if DB option chosen and employer becomes insolvent in next 10 years
- Member might be more prepared to take on investment risk / longevity risk to mitigate insolvency risk
- So might pick DC

3 (i) **List the factors to be taken into account in determining a Recovery Period.**

- Employer's covenant
- Scheme's asset and liability structure
- Risk profile of scheme
- Liquidity requirements
- Age profile of membership
- Regulator's view
- Is covenant deteriorating/improving
- Strength (prudence) of assumptions
- Size of deficit relative to employer

(ii) **List the powers that the Pensions Regulator has if a Recovery Plan cannot be agreed between the Trustees and the Company.**

- Reduce or freeze future benefit accrual
- Give directions re funding objective and recovery plan
- Impose a schedule of contributions
- Replace Trustees
- Wind up Scheme
- Issue improvement notice → civil penalty if non-compliance
- Apply to High Court for injunction against individuals

(iii) **Explain what is meant by the Company's covenant.**

- Ability and
- Willingness
- to pay sufficient contributions
- to meet the benefits as they fall due

(iv) **State *five* methods by which the Trustees could assess the Company's covenant, indicating an advantage and disadvantage of each.**

- Assess business outlook in general and for business sector
  - Cheap
  - Subjective, difficult to quantify

- Review financial metrics (accounting ratios etc.)
  - Simple, cheap, can spot trends
  - Only annual figures available publicly, difficult to quantify risk

- Review implied market default risk (by looking at market prices and/or yields on equities and corporate bonds – more specifically use Merton model)
  - Up to date market information readily available
  - Bond yields can be influenced by external factors such as supply and demand
  - few schemes have access to market info for their sponsors
  - no allowance for differences in debt priority

- Review credit rating from a specialist agency
  - Agencies have access to information that is not publicly available,
  - can be translated into quantifiable measures of risk which eliminates difficulties associated with market forces that affect prices
  - Only larger sponsors will have agency ratings
  - could use assessment of sponsor covenant used to determine PPF levy

- Independent business review (by external credit advisory specialist such as insolvency practitioner)
  - Can help Trustees work out how much the employer can afford to pay
  - Expensive, requires cooperation of sponsor for access to confidential information

(v) **Outline the options available to the Trustees if they believe that the Company is in financial distress.**

- Change the scheme's investment strategy to bonds
- Invest in assets that pay out in event of sponsor default such as derivatives including credit default swaps
- Consider alternatives to cash payments such as a charge on sponsor's assets
- Introduce ratchets in contributions if sponsor's financial position improves
- Contingent contributions from sponsor if scheme's financial position deteriorates
- Reduce future benefits or increase member contributions
- Some might argue Trustees could invest in risky assets if below PPF funding level as no loss to members if it goes wrong and sponsor becomes insolvent

(vi) **Recommend, with reasons, whether the Trustees should accept the Company's counter proposals.**

No
Present value less than £100m

- Which may be okay if some allowance made for actual investment returns to exceed corporate bond returns

Significantly back end loaded
Recovery period too long
Unlikely to be acceptable to the Regulator

- Trustees need to understand what Company can afford without risking viability of business
- Go to mediation if impasse

Credit was given if case well argued for accepting company proposal.

(vii) **The Trustees have asked you to explain why the IAS19 disclosures are so different to the ongoing valuation position.**

Outline the points you would make in your response to the Trustees.

- Balance sheet item is asset of £20m compared to ongoing deficit of £100m
- P&L charge is £2m compared to PU cost of 25% of £60m

- Different effective date — 31 December 2006 vs 31 October 2006
- Different purpose for figures — financial reporting (= best estimate) vs funding (= prudent)
- Responsibility for assumptions — Company Directors vs Trustees in consultation with the Company
- Accounts may include figures for more than one scheme
- Figures may have been produced before ongoing valuation finalised
- Balance sheet specifics:
  - May not be immediately recognising gains and losses under IAS19
  - May not have recognised all prior service costs under IAS19
- Different discount rate may have been used — Bond portfolio underlying choice of discount rate could be different for ongoing valuation (bonds held by scheme) and accounting figures (high quality corporate bonds of consistent term and currency
- Other different assumptions as valuation assumptions deliberately prudent
  - Different inflation assumption
  - Different salary growth assumption
  - Different mortality assumption
  - Different withdrawal rate assumption
  - Different ill-health/early retirement assumption

- Accounting Standard may direct different treatment for
  - risk benefits
  - expenses
  - asset value
- P&L specifics:
  - As for balance sheet, plus:
  - Part of cost could be met by members (25% is joint rate)
  - P&L charge made up of service cost plus finance cost (25% is equivalent to service cost only)
  - Finance cost could be negative if high expected return on assets assumption used

(viii) **Summarise the advantages of having the Finance Director on the Trustee Board.**

- Can bring financial expertise to Trust Board
- Can bring knowledge of investments to Trust Board
- Can gain greater understanding of pension scheme finances which will assist with FD role
- FD is best placed to pass on information about Company finances so that Trustees can monitor the employer's covenant

(ix) **Outline the potential conflicts of interest that the Finance Director may face in his role as Trustee and suggest ways in which these conflicts of interest could be managed.**

- FD has same responsibilities as other Trustees
- One potential conflict is between role as a Trustee and as a beneficiary of scheme where decisions to improve benefits for one category of member say could benefit him personally
- Major issue can be confidentiality of company information that he would prefer not to pass on to Trustees
- Other conflicts could arise specifically for the FD where decisions are required that may have cost implications for the Company
- Examples are award of discretionary benefits, augmentations, conversion terms for AVC funds to pension
- As FD aim may be to control costs
- As Trustee must act prudently, in best interest of beneficiaries
- In context of Recovery Plan FD might prefer to pay off deficit more slowly whereas a Trustee may prefer to have deficit paid more quickly

Managing conflicts

- Could resign as Trustee
- Could step down from decision making process in areas where a conflict exists

Other issues

- Change structure of Board to reduce influence of FD

END OF EXAMINERS' REPORT