

# **EXAMINATIONS**

April 2004

**Subject 404 — UK Fellowship Pensions**

**Paper One**

## **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.

J Curtis  
Chairman of the Board of Examiners

5 July 2004

*Overall, candidates scored well on this paper. However, all too often candidates used a scattergun approach to their answers. In addition, some answers were too vague and it appeared that candidates were answering a general question rather than relating it to the specific question asked.*

**1**

(i)

- Reduces the benefits provided by the occupational Scheme and hence reduces the overall cost
- Focuses pension provision on the member's total benefits at retirement from all sources
- therefore reducing unnecessary or duplicate benefits
- Highlights the benefits that will be provided by the state
- and may result in the benefits from the Scheme being better understood and valued more by members

(ii)

METHOD: Determine the target benefit ignoring the State benefits and then define the scheme benefit as the target less the benefits that will be provided by the State

**Difficulties**

- Administratively complex
- Dependent on the individuals circumstances and past & future contributions

METHOD: As above except deduct a proxy for the State benefits that accrues during membership of the Scheme

e.g.

- a deduction of say  $1/40$  of BSP may be made to allow for the BSP accruing over a potential membership of 40 years
- a deduction of say  $1/200$  of earnings between LEL & UEL may be made to allow for the State additional pension (from S2P) accruing to the average member

**Difficulties**

- This is an approximate method
- as the deduction would be lower than the pension from S2P for the older members and higher than that for the younger members

METHOD: Adjust the pensionable earnings in an attempt to approximately achieve the above methods

e.g.

- a deduction of say  $1.5 \times \text{BSP}$  from pensionable earnings from a scheme with an accrual rate of  $1/60^{\text{th}}$

### **Difficulties**

- Approximation is only valid for members of average age & average earnings
- Adversely affects lower earners
- The method does not attempt to make an allowance for S2P pension

METHOD: Adjust the accrual rate in an attempt to approximate the required deduction for state benefits

### **Difficulties**

- Dependant on the earnings of the targeted employees relative to the BSP

METHOD: A more complex combination of the above approaches

### **Other difficulties for all methods**

- Future changes to the BSP
- Future legislative changes e.g. introduction of means tested benefits
- Changes to State Pension Age
- Different members currently have differing State Pension Ages even within the same sex
- Not everyone receives a full BSP
- Complication caused by early retirement, death or withdrawal of members

*This question was generally very well answered by candidates. Some candidates failed to mention the difficulties associated with their suggested methods of integrating state benefits.*

**2** (i)

- Minimum risk is asset strategy under which assets move as closely as possible in line with liabilities.
- Depends how you measure liabilities
- But general acceptance that bonds of appropriate duration provide the closest match to pension liabilities
- It is not possible to match exactly
- Moving away from this strategy increases the risk that asset values will grow slower (or fall faster) than liabilities
- So in general terms they mean increasing their holdings in equities/property/etc and reducing bonds.

- Arguably, the level of risk depends on views on whether equities/bonds are over/under-valued at present
- “Increasing investment risk” depends on what strategies they each start from
- So they may not mean the same thing
- Risk also depends on employer’s position — ability to pay future contributions

(ii)

- They will have different valuation methods/assumptions so may not mean the same thing by surplus and deficit

Surplus situation:

- Conventional to say that existence of surplus leads to higher risk tolerance because losses are affordable
- Note that adverse experience could be severe enough to result in deficit
- Unless they only take a risk with surplus
- What do they do with the extra assets if risk pays off?
- Benefit improvements?
- Valid objective for trustees thinking of members
- Effectively taking a bet at company’s expense because costs will be higher if the bet fails
- Or further contribution reduction
- Limit on how much value this will be to employer (FRS17, etc.)
- (especially if plan is closed to new entrants)
- who might prefer certainty of the existing level of surplus
- So if do this, need to monitor: maybe reduce risk if the bet pays off, and if the bet does not!
- Opinion agree or disagree (if persuasive)

### Deficit situation

- There is another way of getting to adequate funding: extra contributions
- Maybe company can't afford it
- So if they "match" investments the deficit will never disappear
- If risk fails, deficit will be even bigger — what happens then?
- Maybe the position will be so bad that PPF will pick up the tab
- Which would deliver most of the benefits
- This can only happen if the sponsoring employer is insolvent
- (This may not be the parent company — depending on PPF rules)
- Also, should consider liquidity needs — with equities more likely to need to sell assets as lower income yield
- If do this, need to monitor ongoing: reduce risk if the bet pays off and funding level becomes adequate
- Opinion agree or disagree (if persuasive)

*(i) This question was generally poorly answered. Although in part ii candidates provided answers that showed that they understood 'investment risk', they did not explain what investment risk was in part i of their answer. It was also clear that candidates had learnt a list of items to consider when discussing investments (nature, term, currency, predictability) and did not consider the appropriateness of these items to the question.*

*(ii) Generally not well answered. The better candidates mentioned that the strategy should be kept under review, and provided an opinion (as asked for) on the proposed strategy.*

*Surplus. Candidates should be aware that the statutory surplus test is largely irrelevant in terms of trustee/company considerations on investment strategies (because it is an extremely cautious basis) and that it is being abolished with effect from 6 April 2006. Candidates should bear in mind that the SIP sets out the current investment strategy, and that the SIP can always be changed. Also, it is unlikely that the TD&R are likely to contain any significant restrictions on the holdings of major asset categories.*

*Deficit. The better candidates mentioned the pending changes to the legislation and the impact of the PPF if the risk taken was not successful. Some candidates were under the misconception that because it was a large Company, then it would be easier for it to bail out the pension scheme and that the Company was more secure than a small company. Similarly, large pension schemes are not necessarily more predictable than a small pension scheme.*

- Usually set to equal the actuarial equivalence of the alternative deferred pension
- or the past service reserve
- The more generous the factors the greater the cost
- and probably a higher incidence of early retirements
- What is the employer's objective? e.g. cost neutrality, a specific benefit or a possible as substitute for redundancy payment etc
- Allowance for any discretionary benefits
- The terms could be "fixed"
- or market related
- A simplified or smoothed scale could be used e.g. similar to current scale
- Allowance for future changes to the transfer value basis
- or the past service reserve funding assumptions
- Factors could be sex dependent
- Different factors could apply to different categories and retirement ages
- Employer consent may be needed
- Details of Trust Deed
- Current solvency position
- and the impact on future solvency
- Other practical issues
- Including communication to members
- Admin processes & costs

(ii) **Advantages**

- Neutral on MFR valuation basis
- MFR solvency unaffected by early retirements
- A market related basis
- Scheme gains on early retirement compared to the cost of benefits at normal retirement
- Employer consent should be less of a problem
- No possible member anti-selection
- Advancing priorities will not be a funding issue

**Disadvantages**

- Bad deal for the member compared to benefits at normal retirement
- or the CETV available
- Inconsistent with benefits at NRA
- MFR is unlikely to be the funding basis
- or even the CETV basis
- MFR is to be replaced (legislation changes)
- MFR basis is an artificial and weak basis
- Difficult to explain to members
- Difficult for members to estimate future benefits and plan early retirement as the MFR basis can be volatile as markets move
- Complex to calculate

- and increases administration costs

*Generally well answered, though it was surprising the number of students that mentioned that the cash equivalent transfer value basis would be MFR, and that candidates did not use their answer to part (i) to generate the points for part (ii).*

**4** (i)

- Could treat part-timers in exactly the same way as full-timers, by counting each year in full and applying this to final salary irrespective of hours worked.
- But this would ignore the likelihood of changes in each employee's status.
- e.g. changes in the number of hours worked
- or moves between part-time and full-time service
- and would leave the finances of the scheme vulnerable to switches
- A more common approach would be to calculate service and final salary in terms of its full-time equivalent perhaps based on the numbers of hours worked against the full-time hours, on a monthly (or annual) basis.
- Alternatively, calculate part-time benefit separately from full-time and add the two together but this could get complicated as hours worked expected to change frequently.
- last two approaches avoid potential for abuse by members.

(ii) (a) **Final salary**

- probably the typical defined benefit arrangement in the UK.
- pension at retirement based on salary at retirement so in theory bears some relation to standard of living at retirement
- but switches from full-time to part-time, etc., likely to frustrate this intention (similar issue for career average)
- members might be able to plan but
- approaches in (i) are unlikely to be well understood by employees.

- And a good communication program is essential, especially when employees are changing from one status to the other.

(b) **Revalued career average**

- Fits well with members whose hours/earnings fluctuate as ultimate pension based on average annual (total) earnings over career.
- revalued each year in line with some index
- But, again, difficulties with members understanding benefit so member communication is an issue.

(c) **Money purchase**

- Most new pension schemes in UK are of this type
- Again, fits well with members whose earnings fluctuate
- member communication here relates to understanding investment choices and the options available at retirement.
- Employees may not feel able to decide on investment options

**General points**

- Company will also want some say over expected cost of alternatives and risk implications
- Cost not known in advance for (a) and (b) as depends upon future investment returns, inflation, salary increases, life expectancy, etc.
- Defined benefit arrangements could be useful for recruiting or retaining employees.

What do competitors offer?

(iii)

- fixed revaluation (e.g. 3% per annum). Nil revaluation falls into this group.
- revalue in line with some published index (e.g. price inflation, national average earnings)
- discretionary (e.g. depending upon fund resources).



- Discretionary revaluation can be either on top of the amount produced by using a formula or revaluation can be purely discretionary

### **Recommendation**

- price inflation is probably the normal approach for these arrangements but discretionary increases are more flexible. Employees likely to favour use of formula, company would prefer wholly discretionary as one way of controlling costs.

#### **(iv) Risk reduction**

- Set investment strategy such that returns maximised with acceptable level of risk
- Structure scheme so that a lump sum emerges at retirement with members using this to purchase an annuity in the open market, removes longevity and post-retirement investment risk from employer.

### **Cost reduction**

- Have members contribute — this can be either a fixed percentage of pay or a percentage of the total contributions to be paid.
- Have a qualification period — up to 12 months service as an employee before eligible to join the scheme (and no backdating when join).
- Reduce amount of pay which is pensionable, e.g. basis pay only or if any element of pay is a performance related bonus, make it non-pensionable,
- Monitor items such as early retirements to ensure any generous terms are not being abused.
- Might want to look at contracting-out of S2P (if scheme meets reference scheme test), direct NI saving.
- Reduce the benefits e.g. reduce the accrual rate.

*(i) The better candidates mentioned that one option is not to carry out any special calculations in respect of part timers.*

*(ii) Many candidates listed the general advantages and disadvantages of the three types of benefits, rather than linking their answer into the specifics of the question.*

*(iii) Candidates should note that revaluing in line with actual salary increases is a FS scheme, and rolling up in line with actual investment returns is almost a DC scheme.*

*(iv) Generally poorly answered question, and only the better candidates mentioned both risk*

*issues and cost issues, and considered the effect of benefit design. Many of the cost issues are straightforward. Most candidates correctly discussed as a risk control, but it should be noted that there are significant investment risks with with-profits and deposit administration investment contracts.*

- 5** (i) The proposed scheme is likely to reduce the employer's future costs compared to the existing final salary scheme and reduce the volatility of future contributions  
It removes the post retirement mortality risk and the post retirement investment risk  
It may also aid recruitment and retention as the Scheme is suited to changing employment patterns  
The scheme provides a choice of benefits at retirement for members and is likely to be valued and understood by members  
Members are likely to prefer the new arrangement to an alternative DC scheme  
And there is likely to be less employee / union resistance

(ii) **Other considerations for existing DB scheme members**

Will the DB scheme continue for future service or be replaced by the new scheme?

If so what will happen to past service pension benefits?

Or will the scheme be simply for new recruits?

Will an additional DC scheme be required to supplement the pension provision?

**Other issues**

Communication of new scheme to members

Administration costs of the new scheme

Legal and documentation issues

A suitable investment policy is needed

Funding issues

How will death in service benefits be provided?

- (iii) (a) The benefits of the proposed scheme are less valuable than the existing final salary scheme

**The proposed scheme:**

has less guarantees than the existing DB Scheme  
in particular it transfers the post retirement mortality and the investment risk to the member  
It provides less certainty & security as the benefit at retirement are not linked to final salary  
But has greater flexibility in the benefits that can be purchased at retirement  
e.g. dependents benefits where the member can opt to provide benefits to one or more people and not just a spouse  
The employees contribution rate is slightly lower  
The proposed Scheme is simple to understand

- (b) May be more valuable than the DC Scheme  
Pre retirement investment guarantee protects against falls in investment markets  
Hence provides greater security than the DC Scheme  
and provides a more predictable pension at retirement  
Requires a 5% member contribution

- (iv) The pre retirement investment risk is borne by the employer therefore the employer will wish to maximise returns subject to an acceptable level of risk

Likely to have a mixture of equities, bonds and cash  
and may include overseas equities & property  
A higher equity weighting may be appropriate for members say greater than 10 years from retirement  
to maximise potential returns as short term volatility of capital is less important  
For members 5–10 years from retirement move progressively from equities to bonds & cash  
to provide stability in monetary terms  
and to increase the security of capital  
Liquid assets are needed at retirement date as funds will be available to the member  
The asset allocation will change over time as the age profile changes  
Also as the total funds under investment increase the investment opportunities increase e.g. direct property investment

- (v) Consider the required level of benefits to be paid — as per Scheme rules  
The “past service reserve” (notional fund in respect of member)  
or accumulated members contributions would be available to provide death benefits  
but is likely to be small and inadequate for younger members with young families  
Could insure the total required death benefits  
e.g. a Lump Sum benefit (multiple of salary)

and / or spouses pension based on a % of salary  
or a spouses pension to be purchased from a defined cash sum  
Insurance premiums could be met by additional contributions from the  
employer or employee

*(i) Generally well answered. Better candidates demonstrated why the new design might be expected to produce lower benefits and so cost less.*

*(ii) Well answered, though candidates either mentioned the impact on the historic schemes or the practical issues that needed to be resolved.*

*(iii) Well answered, though some of the answers to part (i) were not carried through to this section (in particular with regards to transfer of risk at retirement). Candidates should note that DC is not good for early leavers if it is a very poor DC scheme.*

*(iv) Poorly answered question. Candidates did not follow through what investments should be held for members at different ages, balancing risk and reward.*

*(v) Many candidates set out what benefits should be provided, and not how they should be provided.*

**6**

(i)

- ignore pre-ret mortality
  - because we don't know what the benefits are, not likely to be significant
- ignore withdrawal
  - because decrement would be negligible at this age
- ignore ER
  - if it is cost neutral
- assume no change in mortality/demographic assumptions
  - because no reason to have reviewed
- discount rate at 1.1.03 say 5.25%
  - discount rate is set by reference to corporate bond yields at valuation date
- salary inflation assumption 4.0%
  - 1.5% above price inflation

- price inflation set by reference to difference between fixed and index-linked gilt yields
- since January 2003, yields have risen/fallen/stayed the same
- so assume financial assumptions are now *i/e*
- assume (say) 1% salary rise at 1.10.03
  - low because ABC cant afford it

Calculations:

- general formula =  $N * (\text{salary} * (1 + e)^{(n-0.75)} - \text{offset}) / 80 * \text{annuity} * v^n$
- plug in the relevant items for 2003 and 2004
- result is change of \_%
- allow for extra year's accrual  $(N + 1)/N$
- actual/expected salaries
- adjust for change in salary assumption
- discounted for one year less
- adjust for change in discount rate pre-retirement
- adjust for change in annuity value]

(ii)

- **Unless no joiners/leavers, our “average” individual is now 1 year older than average and has 1 year’s more service than average.**
  - So we should adjust to the current average
  - But the population of the scheme probably is not stable because of ABC’s situation
  - Even in a stable population (in terms of overall numbers), demographics change
  - For example, recruitment humps, sex distribution.
- **Even if there were no joiners/leavers, the relationships between age/salary/etc and liability are not linear so the increase for the average individual is not the average increase.**
  - For example liability/age is exponential at high ages ( $v^n$ )
  - But withdrawal decrement makes it steeper at young ages
  - And not all employees will have received the same salary increase.
- **Z’s employees unlikely to be average for ABC.**

- We need to look at Z's population
- Some of the 2000 employees will have opted out of scheme membership.
  - Need to multiply by the number of members not the number of employees
- My estimate in (ii) is only an estimate — it will be wrong.

(iii) Z employees will become deferred pensioners

This will release FRS17 reserve for ABC in respect of future salary increases in excess of dp revaluation

Estimate effect on FRS17 liability approx 10% reduction  
because weighted average future working lifetime approx 10 years and salary growth 1%pa above price inflation (say)

Z ceases to participate: triggers debt on Z

Calculated as Z's share of MFR deficit

If asset deal Z still part of ABC

If share deal, new purchaser's responsibility but likely to want adjustment to purchase price

But this is probably small compared to the deficit overall.

The number of active employees has fallen substantially

So the deficit as a proportion of salary roll has probably increased.

Does this affect ABC's ability to meet whatever additional contributions are needed to meet the deficit?

(iv)

- There is no need for this:
  - Future salary growth likely to be low, dp revs might be better
  - Alternative to sale is closure, so just get dp anyway.
- 20% is too much:
  - Many employees close to ret so 20% much more than could have expected.
  - Younger employees might leave service soon, so 20% too high

Trustees would require additional costs which ABC cannot afford —

- maybe make the enhancement an unfunded promise instead?

*(i) Candidates did not fully state the assumptions that they were using in their calculations. Marks were only awarded to valid assumptions adopted.*

*(ii) The better candidates picked up some of the nuances and impact of using averages and stable populations in the calculations.*

*(iii) Despite no transfer value being offered, many candidates still discussed the implications of the bulk transfer. The better candidates mentioned the impact of an asset share and a share sale.*

*(iv) Candidates generally did not focus on the interests of their client (ABC company) and simply discussed fair distributions of compensation to members. Very few candidates argued that there was no need for such an enhancement.*

## **END OF EXAMINERS' REPORT**