EXAMINATIONS

April 2004

Subject 304 — Pensions and Other Benefits

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

1 Advantages:

- likely real return in the long-term
- rents generally only go up
- generally lower volatility of returns than equities
- provides diversification from equities
- higher running yield than equities

Disadvantages:

- lower long-term expected returns compared to equities
- poor liquidity
- poor marketability
- large unit size
- if property unoccupied, no rental income received
- management expenses can be high — valuation fees, etc.

The relative advantage/disadvantage of each depends on the following factors:

- The size of the fund
    - the smaller the fund the less likely it will be able to invest directly in property (given large unit size)
- The liability profile
    - the smaller the proportion of actives, the less likely that property investment is to be suitable
- The type of benefits provided
    - if these benefits are linked to increases in the RPI or earnings then property investment (or unitised property fund investment) should be OK.
    - if deferred benefits and/or pensions in payment increase at a fixed rate then property investment is less suitable as rental income usually increases relative to price inflation (RPI).
- The funding level of the scheme
    - if the scheme has little surplus then property investment is unlikely to be preferred over bonds and equities.

Common mistakes were that candidates didn't express specifically enough that the expected returns would be lower or returns were likely to be real.
Candidates answered the disadvantages better than the advantages but didn't often relate the circumstances of the scheme to their answer.

2 (i) Assumptions:

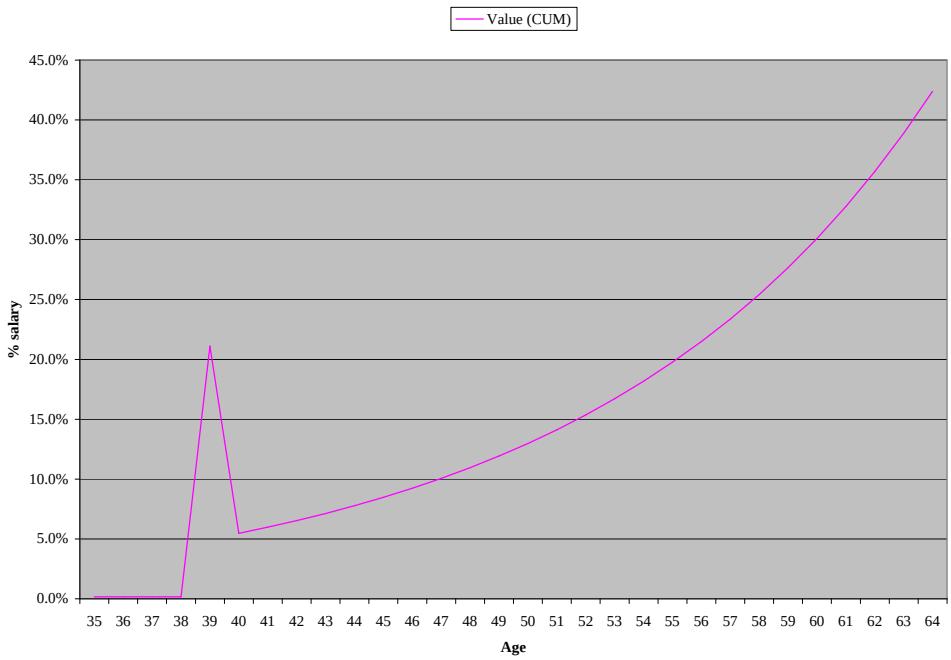
- Annuity value 15
  - Which needs assumptions about post-ret discount rate, mortality, death benefits.
- "final salary" is salary over the last 12 months
- salary growth from previous year is 4%
- *qx* is 0.5% at age 64 on suitable tables

Calcs:

- Increase in retirement benefit is (30/80 – 29/80/1.04) = 2.644%
- Value of retirement benefit = 2.644% × 15 × 0.995 = 39.46%
- Value of death benefit = 5 × 0.005 = 2.50%
- Total value = 42.0%

(ii)

- = answer to (a) in final year
- roughly exponential gradient up to then (slightly steeper than discounting at i%)
- = close to zero (death benefit only) in years 1–4
- spike in year 5 for completion of vesting



(iii)

- In general, make the value of accrual more even over an employee's career.

- The effect of this will depend on what proportion of employees leave service before normal retirement.

- If overall costs don't change then the effect must be to provide more to an employee who leaves and less to an employee who stays until 65.

- Note that any such change would be adverse on existing employees who are now entering the more valuable phase — transitioning them would add to costs.

Some possible options (only want two):

- Remove/reduce the vesting period
  - Fairly small cost (if no revaluation) even if a high proportion leave within 5 years,
  - but may have a high perceived value for new employees.
- Introduce some form of revaluation to deferred benefits
  - Likely to be significant cost,
  - so might need to adjust other aspects (e.g. accrual) to re-balance
- Offer defined contribution benefits
  - Benefit value can be independent of age,
  - and may be more obvious to younger employees.

(i) Many candidates did not allow for the death in service benefit and where they did they did not allow for the fact that the member had to survive to receive the retirement benefit.

(ii) Very few candidates drew the spike although most had an exponential curve.

(iii) Candidates talked about more potential new joiners and the possible adverse administration aspects that this would lead to.

3 (i) **Financial**

The main financial risk is that the actual costs are unknown in advance

An actuarial projection of the cost of the benefits will have established a suitable funding level but the actuarial assumptions may prove to be too optimistic

For example
Mortality — pre retirement
Mortality — post retirement
Investment return
Salary experience

Asset / Liability mis-match
Accounting standards requirement

Operational

Possible poor Scheme administration e.g. incorrect payments to and from the Scheme
Other compliance issues
Misappropriation of assets

Legislation

The impact of future unknown changes to legislation
For example
Requirements to provide higher minimum benefits
Increases to existing benefits
Winding Up requirements

Political risks

(ii) Start by specifying the problem (e.g. reduce the financial risk)
and analyse alternative benefit designs and contribution patterns to determine possible strategic decisions to mitigate the risks

Use the following to develop the possible solutions
Regular actuarial valuations to ensure the reserves held are sufficient to meet benefit promises and future contributions are set at satisfactory levels
Using different actuarial models / funding methods
and assessment of different valuation assumptions to gain greater understanding of their sensitivities
Asset/ Liability models to consider alternative investment options
Consider alternative definitions of current and future solvency levels

Monitor the experience and use the results to feedback into the problem specification

and the solution stage of the control cycle
Identify the causes of any departure from the targeted outcome from the model

(iii) **Financial**

Use a more conservative valuation basis
and estimate the costs on various scenarios to understand the range of possible costs

Investment

Use of ALM modelling
Strategic asset allocation to match assets and liabilities
Investment manager analysis
Purchase immediate annuities at retirement to transfer mortality and investment risk

Benefit Design

Reduce the level of future benefits
For example
Reduce the accrual rate
Increase the pension age

Change the definition of pensionable salary e.g. remove fluctuating emoluments
Increase the level of member contributions
Switch to a defined contribution scheme
or introduce a hybrid scheme

Operational

Adopt good administrative procedures and systems
Regular audits
Use professional advisors
Changes to legislation

(i) Candidates focussed on the risk that benefits might not be appreciated, the employer's need for paternalism and attracting / retaining staff

(ii) Some candidates did not list the stages of the control cycle

(iii) Not very well answered, most candidates failed to realise that scheme benefits could be reduced as being a possible solution

4 (i) Issuing sufficient and relevant information would allow members to judge whether the Scheme was being run on a sound financial basis

and in accordance with the trust deed and scheme rules
and that robust administrative procedures were in place

It may provide an early warning system to alert members to potential problems
Members may then put pressure on the scheme sponsors, trustees or regulators to ensure that any problems are quickly rectified

Alternatively members may choose to take a transfer value of accrued benefits if they feel that the security is inadequate

(ii) **Key Information**

Actuarial Valuations & a statement of funding principles
Annual Report & accounts from trustees
including contribution obligations & investment strategy
Individual member benefit entitlement & options
Other sensible suggestions

Advantages:

Aids understanding of
Funding objectives & Investment issues
Promised benefits and the options available (e.g. transfer / early retirement etc.)
to give confidence that the Scheme is being run satisfactorily

May alert members to potential problems / concerns

Disadvantages:

The information may be incomprehensible to many members
Members lack of interest
Too much information — information over load
May frighten members unnecessarily & result in inappropriate action (e.g. leaving scheme)
May create false / unreasonable member expectations
Adds to administrative expenses

(iii) Require advance funding
with regular solvency checks
Insurance / levy to guard against insolvency
Separation of assets from sponsors other assets
Restrictions on types of assets held
Trustee control of funds
Member appointed trustees
Authorisation of individuals connected with the Pension Scheme e.g. investment managers, scheme actuary etc.
Prescribed valuation basis
Compulsory insurance
Independent trustee

(i) No common difficulties encountered by candidates to report.

(ii) Some candidates focussed too much on the advantages and disadvantages to the company rather than to members

(iii) Some candidates answered this in question 3 part (iii) but then did not repeat their answer here

5 (i)

- One possibility is to pay claims as they arise
- so no money is set aside
- although the employer may wish to establish a book reserve.
- for a recently established company paying claims as they arise should have minimal impact on cashflow initially
- but this would be expected to increase as time goes by
- company may not have funds available when needed
- so little security for employees (strictly speaking their dependants).
- Second possibility is to establish a fund to meet claims as they arise
- contributions to this fund need to be sufficient to meet benefit for current employees and
- build up a reserve which is sufficient at retirement/leaving to meet subsequent payments
- lump sum (or additional contributions for a few years) will be needed to meet costs associated with former employees.
- assumptions will be needed to determine contributions required:
    - mortality rates
    - investment returns
    - funeral costs escalation
    - expenses
- funeral costs escalation could be estimated using past trends
- in particular relative to investment returns
- contributions will need to be monitored.

(ii)

- Second approach preferred
- as ultimately cost is paid whilst employee in service
- once liability for past employees is fully funded, if assumptions are borne out, no further cost arises after employment period finished.
- in practice, some monitoring will be required

(iii)

- might want to restrict lump sum employer at death (if applicable) meets to 0.2% for each month of potential service to NRA
- otherwise employers might be reluctant to recruit older employees.
- Will there be any restriction on type of funeral plan?
- might want to limit cost to that of a 'standard' (however defined) funeral
- and introduce watchdog to stop funeral plan providers profiteering
- who will meet costs for those who die whilst not employed (if full cost not met by former employers)?
- what happens if company unable to meet their share of cost — some sort of safety net would seem sensible
- probably met by annual payments made by all employees
- or have compulsory insurance to cover benefit.

(i) Some candidates wrote all they could about the different ways of funding e.g. terminal, smoothed PAYG, lump sum in advance etc

(ii) No common difficulties encountered by candidates to report.

(iii) Most candidates came up with some reasonable suggestions.

6 (i) Mortality — increases in life expectancy
Falls in real gilt yields
Lower price inflation increasing the value of any guaranteed pension increases
Poor investment performance
Higher salary increases than expected
Adverse decrement experience
Inadequate contributions in the criterion
Augmented benefits awarded

The above points apply equally to open and closed schemes

For closed schemes

There is a reduced ability to smooth experience as the active memberships dwindles
Expense ratios increase
The average age of membership increases over time
Changes to funding method
Changes to Investment strategy

reducing equity holdings and reducing the potential returns

(ii) **Membership Profile**

The scheme will "mature" over time as the average age of the membership gradually increases
although the impact may be relatively slow initially as there will be retirements and leavers
The shape of the profile will change and result in greater volatility & risk
The active membership becomes increasingly irrelevant
The Scheme has a finite life
but this may be many years

Funding Method & Assumptions

The funding method & assumptions needs to reflect the changing Scheme profile
The Attained Age funding method may be the most appropriate
as it allows for the increasing average age
The Investment policy adopted is likely to change over time and the investment assumptions used need to reflect this
Valuation assumptions need to reflect the finite length of the Scheme
The ability to smooth the experience over future generation is reduced
and there will also be less time to take corrective actions
Mis-matching reserves may be appropriate
Communication of the risks becomes more important
Expressing contributions as a % of salary may become volatile therefore look at expressing it as monetary amounts

Investment Strategy

Matching considerations become more important as the ratio of actives to pensioners changes
Fixed Interest & Equity holdings will change as the Scheme matures
Benefit outgo is likely to exceed contributions and investment income at some stage hence
cashflow and liquidity considerations become more important
Use of ALM studies can help to develop a suitable investment strategy

Poorly answered. Many candidates simply wrote that experience was out of line with assumptions.

7 (i) The issues to be considered are:

- Scheme documentation/Trust Deed may require certain terms or dictate who sets terms.
- Need to establish an equation of value between the benefits being surrendered and provided

- The starting principle is usually that a scheme should suffer neither profit nor loss if the option is exercised
- Need to consider an appropriate rate of discount to value the benefit
- Which could be an appropriate current medium to long term bond return
- In practice it may be difficult to vary the return frequently so an average rate or valuation rate could be adopted
- In which case this should be reviewed periodically
- The mortality assumptions need to be set
- Consider the likely mortality rate of those who are likely to exercise the option
- Could assume that scheme will be selected against
- and that the option will only be exercised for those dependants in good health
- and/or members in poor health.
- In practice it may be that most people with dependants exercise the option
- and that no special allowance for improved/impaired mortality needs to be made.
- Age of member and dependant will be relevant to cost of surrender. Could use the actual age difference between member and dependant or an average figure, but then selection issue
- Need to decide a practical solution of strict accuracy of all the above points versus administration simplicity.
- Might consider employers view. Do they want to encourage take up to reduce potential for impoverished dependants seeking financial help following the death of the members.
- Could make allowance for additional administration costs in implementing the option.
- Need to consider to what extent, if at all, should include allowance for discretionary post-retirement pension increases in conversion terms. Starting position could be allowance in funding plan
- Alternatively, could consider fairness for the member and other beneficiaries in the scheme, in particular if the discretionary benefit may be expected for the member/dependant (past practice, competitive pressure, etc.), these should be allowed for.

(ii)

- If the trustees are responsible for setting option terms, the employer needs to discuss his idea with them, as there may be cost implications.

- Trustees may require the additional costs to be met through a special employer contribution at the time the option is exercised.

- It may not be a legal requirement to provide equal terms if they are actuarially determined.

general approach to unisex factors is to:

- take the average of the four possible tables:
  - this could be weighted by the actual numbers in the workforce of each combination of sex of member/sex of dependant.
  - but the proper weight should be those taking up the option, which may be affected by the terms offered (impossible to know this in advance)
- alternatively, derive unisex life table for Member and dependant, based on weighted average rates.
- if the workforce is overwhelmingly of one combination, the option terms could be based on mortality of this combination
- Unless allowance is made for the actual sex of member and dependant, the scheme runs the risk that the option will only be exercised by the pairing for whom the terms are most advantageous.
- This would increase the costs of the scheme.
- This may be acceptable to the company, especially if the potential extra cost is not significant.
- Alternatively, could use the factor which represents the least risk of the scheme.
  - this would result in the use of male member/female dependant factors reflecting the longer life expectancy of women
  - but this would tend to over price options for other combinations consider the effect on administration.
- consider impact of changing proportions in each combination over time.
- perceived fairness

(iii) Possible restrictions include:

- Imposing a limit on the amount of a member's pension which can be surrendered
- Availability of option could be subject to satisfactory evidence of good health of member
- Once elected, the decision should be irrevocable
- Only permit surrender to "recognised" dependants, possibly look at some degree of established financial inter-dependency.

(i) No common difficulties encountered by candidates to report.

(ii) Candidates often repeated the question by stating that allowance should be made for the age difference and writing many comments on this
Most did not consider the issues in creating a unisex table and didn't describe the process of creating one

(iii) Many candidates gave a restriction as being that the option can only be exercised at retirement even though this was given in the question

8 (i) Information on your client

- Age now
- Marital status
- Life expectancy / family health history
- Other pensions and capital wealth and income
- Intended retirement age
- His likely tax position
- Attitude to risk
- Importance of flexibility in drawing pensions

Information on the final salary plan

- Tax treatment
- Death benefits (before and after retirement)
- Early/late retirement provisions in the final salary plan
- Pension increases
- (before and after retirement)
- Discretionary benefits
- Security — funding position of the final salary plan
- What happens if the plan was discontinued in deficit?
- How long is transfer offer open?
- Can he take a transfer at a later point instead? — If so, on what terms?

Information on personal pensions

- How much is the cash value?
- Types of personal pension investment funds
- Expenses/charges
- Tax treatment
- Death benefits
- Can he buy an annuity when he draws from the personal pension?
- Current market investment yields

(ii) 1.

- Compare the benefits the transfer could buy with what he gets from the plan
- net of tax/
- and expenses
- start by looking at income matching the FS benefit structure increases/etc.
- assuming annuity purchase or making assumptions about longevity
- Assess the yield required to match
- Compared to market yields on a range of assets

2.

- The PP has more flexibility,
- in the benefits taken at retirement,
- and in pre-retirement investment

3.

- Consider the uncertainties in the PP
- up and down
- investment and annuity/longevity

4.

- There may also be uncertainties in the FS plan
- depending on funding/security/legislation

5.

- He may be able to take a transfer closer to retirement.
- Which might offer best of both: pre-retirement guarantee and post-retirement flexibility

6.

- He should also consider death benefits in either arrangement
- depending on how important this is to him

7.

- Put this in the context of his overall retirement savings and risk tolerance
- will affect his need for security/etc.

(iii) The transfer offered is not enough
Would need a return of *x*% to provide comparable benefits
This is the yield on junk bonds — is that how you see your company? (or similar point)
Financial economics: cost of FS to your shareholders determined by gilt yields

Add in expense loading!
So the cost exceeds the cash value offered
So it's in your interests to offer more.

Fairly well answered on the whole.

END OF EXAMINERS' REPORT