Faculty of Actuaries **Institute of Actuaries**

EXAMINATIONS

April 2000

Subject 404 — UK Fellowship Pensions

Paper One

EXAMINERS' REPORT

General Comment on Subject 404 (Papers One and Two)

The overall standard on the papers was mixed.

The straightforward questions, including bookwork, were generally answered reasonably well. However, answers were often narrow in that they covered a small number of topics in great depth and missed the wider aspects. This limits candidates ability to score well.

The better candidates are able to apply basic principles to non-standard situations and, in determining borderline candidates, this is a key differentiator.

Individual comments on a specific question appear in italics after each model solution.

1 Need to establish what "cost" is (cashflow, accounting expense, something else)
Can track liabilities in relation to employees and ex-employees of each business, so need to allocate assets to each employer
Then need to track the items of cashflow in each employer's account:
Benefit payments
can be allocated to the relevant employee, and so directly to the employing business
more complex if employee has been employed by more than one of the businesses: perhaps calculate a past service reserve or leaving service transfer value when employee switches between businesses.
May be impractical — could allocate to last employer on grounds it evens out.
Contributions (employee and employer)
can be directly allocated
Expenses
suggest allocate by headcount (including deferred/pensioners), as that is how admin costs are determined.
This may not work for legal/actuarial/accounting — could use size of assets.
Insurance premiums
will usually be expressed as a percentage of salaries, so allocate in the same way
Investment returns
could have all assets allocated to each business, so investment return would be allocated automatically
probably more practical to calculate the money-weighted rate of return in each time period, allowing for the cashflows above.
Bulk transfers (assuming future acquisitions/disposals)
bulk transfers in will be allocated to the new business
bulk out may not exactly equal the assets allocated to the business being disposed – spread the difference between remaining businesses, perhaps in proportion to accrued liabilities.

Comment

This question was generally not answered well. Weaker candidates underplayed the importance of allocating surplus / deficit in the benefit costs.

2 (i)

Notification to members

Inform all members & beneficiaries (including pensioners) that the scheme is to be wound up

Providing them with the following information;
The date from which benefits will cease to accrue
The reason that the scheme is being wound up
The action being taken to establish the scheme's assets and liabilities

The name & address of the person to whom further enquiries about the scheme should be

Annual update on winding up progress

Validation of scheme information and membership data

Confirmation & reconciliation of membership data, current actives, deferred members and pensioners
Surrender of contracting out certificate
Reconciliation of GMP details

Legal advice on various issues e.g. scheme trust deed & rules, powers, equal treatment, distribution of surplus
Payment of benefits before the completion of the wind up – normal retirements and payment of transfer values

Valuation of assets and liabilities

Determine the value of the scheme's assets
Calculation of the cash equivalent transfer values for all members
Calculation of the surplus or deficit

Triennial MFR valuations during the winding up process

Treatment of surplus or deficit
Deficiency calculations - GN19 calculations
Determine priority of benefits on winding up

Quotations of individual benefits and options to members
Settlement of benefits - members signed consent form needed and a default arrangement in case no form is received from member
Finalisation of the winding up

Submission to PSO of 'Dispersal of assets form' and inform Contributions Agency and gain approval for securing each member's contracted out rights

(ii)

Possible complications

Major problem – ensuring that membership is complete and all relevant details (e.g. salary, pensionable service terms, pensions in payment are correct)

The sponsoring employer may be insolvent hence independent trustees will be need to be appointed

Member uncertainty during an often lengthy winding up process can cause problems

Reconciliation of GMP details with contributions agency (data supplied to administrators may differ from NI records
Assets may be insufficient to provide the member's expectation of benefits under the scheme rules

Settling retirements and payment of transfer values during the winding up process before complete information is available and hence true funding position is unknown

The cost of immediate annuities & deferred annuities may differ from the liability valuation in recent actuarial reports

Contacting all members with quotations of individual benefits and options (e.g. addresses may be incorrect or unknown)

The associated costs of the winding up process may be significant and reduce any surplus or result in reduced benefits for members

Comment

In part (i) most candidates scored well. In part (ii) better candidates noted the practical difficulties that may be encountered such as in finalising membership data.

3

(i)

Statement of both demographic
and economic assumptions
in valuing both the liabilities
and assets

Attention should be directed to those assumptions to which the contribution rate is sensitive

Changes to assumptions used since the last report

Comment on the compatibility of the basis of valuing the assets with that of valuing the liabilities

Statement of the method employed in deriving the recommended contribution rate

State whether and in what way future new entrants have been taken into account

(ii)

Discounted actuarial value

Future cashflows from actual assets are estimated using the economic assumptions in the valuation basis

These assumptions would include a dividend growth assumption and a dividend yield assumption for equities.

This results in an assessed value but smoothes out market fluctuations

Market value

Objective and usually readily available (i.e. simple)
Valuations are difficult for some asset classes e.g. property
Important to make sure assets and liabilities are made consistent in both methods.

(iii)

Discounted actuarial method – for equities need to make a judgement about the rate at which dividends will grow.
Need to ensure this rate of dividend growth is consistent with the rate of interest used to discount future benefits for members ($i - d + g$)

Valuing the assets at market prices – calculate the liabilities by discounting future benefit flows at the rate of return implied by the market valuation

However the market does not give sufficient information about total returns that investors expect from equities
Therefore the actuary has to make a judgement on this

A typical assumption is that equities will secure an extra return above the yield on Index Linked Gilts – known as the equity risk premium

Other possible methods

(1) The discount rate is simply set equal to the yield on fixed interest bonds on the valuation date

The liabilities are priced by reference to the investments with the closest match – fixed or index linked bonds

(2) The starting point is (1) above - the discount rate is set equal to the returns on bonds plus some assumed equity risk premium
Consider a range of equity risk premiums to demonstrate what happens to the scheme's surplus or deficit for different future equity market behaviour

(3) As per (2) but construct a simple mathematical model to estimate the equity risk premium
Incorporating such parameters as the dividend yield and dividend growth

(4) Use a hybrid approach

e.g. the liabilities for the past service are discounted at the prevailing bond yields but future contributions are assumed to be invested at a higher rate

i.e. future contributions are assumed to be paid when the rates have returned to some undefined 'long term average' position

Question 3

The bookwork of GN9 was generally well answered. In part (ii), however, candidates scored less well, for example, by considering only investment returns and not other economic assumptions.

4

(i)

Money purchase through an external provider.
This could be a building society fund, or insurance company with-profit fund, or a unitised fund.
At retirement, can use the AVCs to buy extra benefits of the member's choice,
either on the open market or within the fund.
Fixed pension
Usually the trustees would set a scale giving a pension of £x per annum for each £1 that the member pays every month until NPA.
Added years
Usually the trustees would set a scale giving y years for each 1% of pensionable salary that the member will pay every month until NPA

Under both fixed pension and added years,

x and y would depend on the member's age when he starts paying AVCs (may be sex-dependent too).
When the member retires, the benefits would be paid in the same form as the main scheme pension (i.e increases, spouse's pensions, etc).
Rules are needed to specify what happens if the member leaves/retires/dies before NPA,
or if he wants to stop/reduce/suspend his AVC payments – this is not necessary if each AVC payment is treated as a one-off instead of assuming regular payments up to NPA.

(ii) If the member is over age 50, may give an estimate of the pension that can be bought on immediate retirement.
For the projections, you would need to make an assumption about future levels of contributions,
(this would be zero if the member is not still paying AVCs).
You could assume that contributions would be paid at the current £ amount, or the current percentage of salary.
May also show the effect of no further contributions, so the member can see how much future contributions are worth.
You will also need assumptions about investment return and salary growth pre-retirement.
Could use the PIA basis.
Usually it is easiest to assume no decrements pre-retirement, but will want to give projections at early retirement if member is paying AVCs to finance that.
The projections could either give an estimate of the AVC fund at retirement, or of the pension it will purchase, or both.
For conversion of AVC fund into pension, you could use annuity rates which represent long-term average conversion terms, or which approximate to the terms available to members retiring now.
The latter would be more relevant for those members close to retirement.
You will need to make an assumption about the shape of the benefits that will be bought (ie death benefits, pension increases, etc).
The results can be expressed as £ amounts, but it is essential to show the effect of inflation up to retirement.
So results can be discounted in line with estimated price inflation to give comparability with current purchasing power, or with salary inflation to give comparability with standards of living.
Or this could be achieved by expressing results as percentages of projected salary at retirement.
The Trustees can give a range of results on different assumptions, to show the variability of the projections.
But must avoid the impression that the benefits will definitely be within the range quoted.

(iii)

Cash lump sum, if the member commenced his AVCs before 8 April 1987.
Conventional annuity – i.e all payments determined in advance.
The member can choose an annuity which does not increase in payment or which increases (at a fixed rate, or in line with RPI, etc).
The member can choose what benefits would be payable when he dies after retirement (lump sum guarantee payment, spouse's/dependant's pensions)
Annuity can be offered from scheme (terms set by trustees) or purchased from an insurer.
Unless trustee terms are matched the fund bears an ongoing risk.
Investment-linked annuity
These offer less certain payments, but do allow the annuity provider more investment freedom, and so potentially higher aggregate payments.
Usually a with-profit annuity, so that the level of increase is determined each year by the annuity provider
Or a unit-linked annuity, where the payments are determined by the price of the provider's investment fund.
Income drawdown [*not in syllabus*]
No annuity is purchased, so the fund remains invested,
and the member regularly draws down some income from the fund within Inland Revenue limits.
Deferral of AVCs
The member simply leaves the whole AVC fund invested until he decides to take up one of the above options.

Comment

Overall this question was answered well. There were a large number of points to be made in each part of the question and nearly all candidates scored good marks.

5

(i)

- Deal will usually seek to provide continuity of pension rights.
- This requires a bulk transfer to be negotiated to fund provision of accrued benefits from the Global Seeds scheme.
- The terms should be equitable to both buyer and seller.

- As well as other interested parties
  e.g. trustees of buyers scheme
  trustees of sellers scheme
  transferring members
  members of buyers scheme

- The terms should be in a separate schedule of the SALE & PURCHASE Agreement.

- Which may require an actuary's letter and warranties about pension terms.

- The actuary's letter from seller's actuary to buyer's actuary sets out actuarial terms for bulk transfer

- The schedule will contain details of:

  - seller's obligations
  - buyer's obligations
  - calculation of bulk transfer, and who does it
  - timing of payment
  - dispute resolution terms
  - details of how money transferred (cash/assets)

- There may be a "participation period" to give time to finalise arrangements.

- Pensions may be a major part of sale, which buyer/seller may not have appreciated, as not only future service.

- Buyer needs to appoint an actuary to act

- May be a surplus in seller's scheme, making sale terms more complex.

- Failure to agree terms correctly may result in immediate staff problems.

- May wish to admit members to executive scheme or set up new scheme.

- Past service benefits will be protected by the terms of the transfer.
  The terms may also try to establish future service terms.
  Need to consider whether future benefits should be changed.
  This will depend on what, if anything, is currently given to current employers
  and the needs of the new group (i.e. does their profile/competitive position indicate a particular type of benefit)

- Overall pension terms can dramatically affect financial attractiveness of deal

- So may wish to delay agreement to get pensions aspects dealt with fully

- But this will depend on the number of transferees and whether it is material

(ii)

- Copy of draft SALE & PURCHASE agreement

- Copy of seller's scheme booklet and
  Any other literature, particularly for special deals

- Copy of most recent seller's scheme actuarial report.

- Copy of seller's most recent annual report.

- Copy of seller's most recent audited accounts.

- Similar information for buyer's scheme.

- List of all transferring staff, showing

  - name
  - sex
  - date of birth
  - service dates
  - salary/pensionable salary
  - category (if applicable)
  - confirmation no deferred/pension members to be transferred
  - if so details will be needed
  - Trust Deed - Rules of ceding scheme
  - name/address of seller's actuary
  - names/addresses of seller's & buyer's solicitors

(iii)

- Set first deal terms in a way that makes subsequent transfer simpler

- Potatoland may not wish to set up a Final Salary Scheme

- So may want initial agreement to allow flexibility in pensions provision format

- - Potatoland may not wish to provide any pension benefits but make up for this in other benefits (e.g. salary)
  - but make sure initial Sale & Purchase terms give flexibility

- Need to give value for money transfers for their past service.

- There may be a participation period in the Global Seeds scheme. This should ideally be agreed to be:

  - as long as possible
  - to allow participation for Potatoland
  - so that Northern Seeds never have to provide benefits for transferring members

(iv)

- The trustees are not bound by the agreement
- If trustees require higher TV, seller will come under pressure to adjust the TV
- The TV cannot go ahead without members' consents
- Buyers obligations include requirement to provide adequate past service benefits
- Both actuaries are professionally required to ensure terms are fair
- If terms are unfair, employees have grounds for constructive dismissal, so solicitors have responsibilities to ensure terms are fair.
- The trustees could appoint another actuary to advise them.

Comment

In part (i) the better candidates focused on immediate issues such as the sale and purchase agreement, actuaries letter and participation period. A number of candidates spent a lot of time discussing long-term benefit design issues and, as a result, missed many of the marks available from other aspects. Parts (iii) and (iv) were generally answered poorly. Few candidates talked about keeping the second part of the deal simple and flexible.

6

(i) What commitments, if any, were there in the buy out agreement with regards to future pension rights?
Does the employer want to provide any pension benefits?

What is employer's attitude to employees?
Paternalistic culture may make generous defined benefit more likely.

What benefits were employees previously entitled to?
What options do they have in relation to these past rights?

Can or would the company wish to treat new employees differently from initial employees?

Who are the company's competitors and what benefits do they provide?
Will this company need competitive pension benefits to attract and retain staff?

How much budget is available for pension benefits?
Would the FD prefer to target the budget towards any specific class or group of people?
Will employees be required to contribute?

What is FD's attitude to risk and potential variable costs in the future?
What is size of company and turnover to gauge relative importance of pension arrangements?
What is future plan for company in terms of growth and acquisitions?

What is current and future age and salary profile likely to be?
Are there different classes to be treated differently e.g. would executives require a separate arrangement?

How much, if any, resource is available for administration and how much involvement does the company want?

Are there unions who are likely to press for a certain type of arrangement.

(ii) **Company**
Money purchase scheme employer knows exactly what it will be contributing.
Financial risks are transferred to employee.

May not provide competitive benefits.
May not target contributions where employer wants to.
If inappropriate money purchase investment choices made by employees, this may rebound on employer.
Significant employee's education/support will be necessary to avoid future problems.
Final salary costs are unknown in advance
and will vary with experience.
Legislation can introduce conditions that make final salary scheme become a financial burden on the employer.

Final salary schemes are likely to require more involvement in company administration time
but can be more flexible in terms of the timing of any funding requirements, e.g. redundancy exercises.

Employees
In a final salary scheme employee is likely to know in real terms the level of benefit they will receive.
Financial risk is with the employer.
Final salary scheme may be attractive in periods of high inflation or rapid promotion.

In a money purchase scheme employee benefits from good experience and suffers from bad experience
e.g. investment returns, annuity rates

Employees may appreciate one type of arrangement more than other depending upon understanding/knowledge of pensions.

Employee has more flexibility in the type of benefits they may take from a money purchase scheme.

(iii) (a) The benefits could be left as money purchase benefits when a member retired or died they would receive total benefits from two different types of arrangement.

(b) Members could be offered service in the defined benefit depending on the time they had been contributing to the defined contribution arrangement e.g. they receive one year's pensionable service for each two years of membership of the defined contribution arrangement.
This would be simple to understand
but would potentially be very inequitable between two different members.

(c) Service in the defined contribution arrangement could be based on the number of years purchased by money purchase pot accumulated to date.
This will require assumptions to be made about future experience
and may be difficult to communicate to members.

(d) Any other sensible well argued method.

(iv) Is it a once only opportunity to switch?
Can you switch back at a later date?

What terms are going to be offered in respect of existing money purchase benefits.

What are future contribution rates to the money purchase arrangement from the employer
employee.

What are the benefits under the defined benefit arrangement?
Is there a difference in how state benefits are treated, e.g. is one section contracted out and the other not contracted-out.

What investment choices are available in money purchase section?
What are expected future returns?
What is outlook for annuity costs or pension terms at retirement under money purchase section?

Personal circumstances need to be considered, e.g. does defined benefit section provide benefits unlikely to be required.

What is state of health and how do death benefits compare?

What is expected future at company, e.g. salary growth or getting promoted to a grade with better benefits?
How long does the person expect to be with the company?
Are any generous early retirement/ill health terms available which may be important?
What is employee's attitude to risk?

Comment

Good candidates scored high marks on this question.

Parts (i) and (ii) were generally answered well although some of the basic differences between money purchase and final salary were not clearly stated. Many candidates often considered only the investment risks without considering wider issues such as solvency or communication. In part (iv) the better candidates considered the personal circumstances of the individuals making the decision.