INSTITUTE AND FACULTY OF ACTUARIES

EXAMINERS' REPORT

September 2011 examinations

Subject ST4 — Pensions and other Benefits Specialist Technical

Purpose of Examiners' Reports

The Examiners' Report is written by the Principal Examiner with the aim of helping candidates, both those who are sitting the examination for the first time and who are using past papers as a revision aid, and also those who have previously failed the subject. The Examiners are charged by Council with examining the published syllabus. Although Examiners have access to the Core Reading, which is designed to interpret the syllabus, the Examiners are not required to examine the content of Core Reading. Notwithstanding that, the questions set, and the following comments, will generally be based on Core Reading.

For numerical questions the Examiners' preferred approach to the solution is reproduced in this report. Other valid approaches are always given appropriate credit; where there is a commonly used alternative approach, this is also noted in the report. For essay-style questions, and particularly the open-ended questions in the later subjects, this report contains all the points for which the Examiners awarded marks. This is much more than a model solution – it would be impossible to write down all the points in the report in the time allowed for the question.

T J Birse
Chairman of the Board of Examiners

December 2011

General comments on Subject ST4

This subject examines the ability of candidates to apply core actuarial techniques and concepts, together with specific knowledge of pensions and other benefit arrangements to simple, but practical situations.

The examiners therefore look for candidates to apply their knowledge of the core reading to the specific situation that the examiners asked, having read the question carefully. Too many candidates write around the subject matter of the question in more general fashion, or focus on one aspect of the issue at great length, in either case gaining few of the marks available.

Good candidates demonstrate that they have used the planning time well – an attempt to get a logical flow is a big advantage in making points clearly and without repetition. This also enables candidates to use the latter parts of questions to generate ideas for answers to the early parts (or use their solutions to earlier parts of questions to create a structure for latter parts). Time management is important so that candidates give answers to all questions that are roughly proportionate to the number of marks available.

Comments on the September 2011 paper

The general performance was slightly worse than in April 2010 but well-prepared candidates scored well across the whole paper. As in previous diets, questions that required an element of explanation or analysis, such as questions 3, 4, 6 and 8 part (iii), were less well answered than those that more directly related to specific elements of the core reading. The comments that follow the questions concentrate on areas where candidates could have improved their performance. Often these will relate to matters of exam technique, such as reading the questions carefully, following the instruction (e.g. list, outline, discuss), and structuring answers logically.

1 (i) Net replacement ratio = $\dfrac{\text{After tax income in the year after retirement}}{\text{After tax income in the year before retirement}}$

Most candidates scored the full mark available, but some used gross income in the definition, and some reversed the numerator and denominator in the calculation.

(ii) *Limitations*

- The final year's income before retirement may not be a typical year
- For example if the member worked part-time or worked extra overtime in the year before retirement
- The pattern of spending may change after retirement, for example:
- ... if any loans the individual has taken out, particularly those to purchase property, are repaid prior to retirement.
- ... People often save for retirement while working, and on retirement the level of saving can be expected to fall
- ... People may face lower costs after retirement, such as travel to work costs, contributions to pension arrangements and the State scheme.
- More money may be required for leisure activities and healthcare after retirement.
- Pensioners may be able to obtain subsidised products and services
- ... e.g. travel, cinema, eating out etc.
- Wealthy individuals may be able to accommodate a significant reduction in income...
- ... whereas a reduction in income for the lower-paid may cause hardship
- Can be a misleading figure if it excludes other sources of income or other non-income producing assets.
- Can be misleading if excludes other short term income – e.g. cash commutation or other at retirement payments.
- The initial rate of pension may not prove sufficient later on in retirement
- E.g. if substantial continuing care costs arise when the individual's health deteriorates

Question 1 part (ii) was also generally answered well – the better answers considering several aspects, i.e. pre and post-retirement changes to income and outgo, different levels of wealth, the short-term nature of the measure versus the long-term nature of retirement and the resulting changing needs.

2 (i) *Benefit changes*

- Reduce accrual rate
- Allow for state benefits by explicit reduction to benefit or
- .. offset within pensionable salary definition
- Remove or reduce increases in payment
- .. and in deferment
- Amend spouse's pension proportion / remove it altogether...
- Could be pre retirement, post or both.
- Introduce member contributions
- Change definition of pensionable salary
- .. e.g. just to basic earnings*
- .. or cap earnings at fixed level*
- .. or cap earnings increases in future*
- ..or change basis of averaging

* Credit for one example only (including any other sensible suggestion)

- Could change format of accrual to DC **at lower cost**
- Or to career average earnings
- .. with or without revaluation
- Allow option for commutation of some pension into cash at retirement
- .. on terms beneficial to the scheme
- Increase the normal retirement age?
- Make the entry criteria tougher, e.g. longer period of service before being eligible to join (keeps it open but cuts the cost of accrual on new members)
- Remove any beneficial early retirement terms, if they exist?
- Remove any discretionary practices e.g. additional pension increases
- Or amend other option terms – e.g. terms for transfer values

Answered well by most candidates – although some failed to make distinct points e.g. by suggesting reducing pension increases to two different levels.

(ii) *Specific suggestions*

- Reducing accrual to 80ths would reduce contribution rate by 25%
- Introducing members' contributions would reduce company contribution rate by the corresponding amount
- Removing pension increases in payment could reduce future costs by around 30% to 40% (assuming inflation of ~ 3% per annum)
- Increasing retirement age by, say, 5 years (with any sensible indication of the impact)
- Removing spouses benefit entirely to save 10-15%
- Change to DC – saving dependent upon new contribution rate.
- Any other reasonable suggestion with explanation / illustration.

Credit was only given for changes that would result in a significant reduction, as specified in the pre-amble to this part of the question. Whilst part (ii) was generally answered well, some candidates failed to give approximate costings, or over-engineered their calculations, given both the instruction to "illustrate the approximate effect", and the limited number of marks available.

3 *Initial calculations*

- Annuity certain for 10 years at 4% = approx 8.3 (continuous)
- 12 * £1,000 * 8.3 = £99,600
- Hence £100,000 is approximately the present value of the next 10 years benefit payments at the risk-free rate
- And represents around 8 years of benefit payments ignoring interest (£100,000 / £12,000)

Allow similar marks for calculation of 20 years' payments and comparing that to £100,000.

Key financial considerations

- A key factor for the man to consider is how long he expects to be receiving the benefit
- He may be in a better position to estimate this than the insurance company...
- ...particularly if circumstances have changed over the last five years.

- This will depend in part on any views he may have on his life expectancy (mortality)

- If he considers his life expectancy to be seriously impaired (i.e. likely to die within the next few years) then the offer would represent very good value...

- ...and would enable the man's dependants to inherit some of the benefit after his death

- If the man's life expectancy is not impaired then it is likely that he will survive until age 65.

- In which case how long he expects to receive the benefit will depend on his views about how much longer he will remain unable to work due to ill-health (morbidity)

- If he foresees being able to return to work within the next few years then the offer will represent good value for money.

- Otherwise he would be giving up a benefit for up to 20 years

- And would need to invest the lump sum and achieve a high return to extract equivalent value

- So his views about future investment returns and attitude to risk would be important

- Consider what earnings would be available in alternative employment he is fit for

Other considerations

- The member's preference for cash now vs. income later...

- ...for example, the possibility of using cash to pay down debts or make a large purchase

- His views about future inflation, which would erode the real value of the income stream

- Other assets/sources of income, and the importance of this benefit to his standard of living

- His attitude to work, i.e. the state of health at which he is prepared to seek employment

- ... in relation to the strictness of the insurance company's "unfit to work" disability criterion for continued payment of the benefit

- The offer may enable him to take the lump sum and return to employment earlier than he otherwise would...

- ...whereas continued receipt of the benefit might encourage him to remain out of work when he could, in fact, seek employment which would cause the benefit to stop

Risks

- Poor estimation of future mortality / morbidity prospects
- Lump sum option: poor future investment returns leading to reduction in income...
- ...or loss of capital
- ...or failure to adequately manage personal finances over time
- Lump sum: risk that he spends it quickly on discretionary items – e.g. cruise/car etc.
- Monthly income option: default of the insurance company
- Monthly income option: erosion of real value of income due to high inflation

This was the first question on the paper where the majority of candidates struggled, and it appears that many candidates tried to answer this purely by recalling bookwork, without applying their knowledge to the particular circumstances of the question. Students often listed factors but left the examiners to interpret their relevance to the question, which for a "discuss" question, fails to demonstrate understanding of the subject.

The key issue is the length of time the individual expects to receive the monthly income for, which depends both on his life expectancy and the likelihood of him returning to work. Separately, he may also consider his immediate cash needs and the flexibility offered by a lump sum. Stronger candidates coherently and concisely analysed the breadth of these issues, using the numerical information in the question to demonstrate their understanding. Setting out the calculations, and thus identifying all the assumptions that would affect any comparison of value might have helped the weaker candidates generate a longer list of "considerations and risks" to discuss.

4

- For all approaches, assets taken at market value

Asset-based discount rate

- An implied market discount rate is determined for each asset class
- E.g. could use gross redemption yield for bonds
- i.e. between 3.3% and 4.8% p.a. depending on term of bonds held
- For equities, more judgement needed

- Assuming inflation of 3% p.a., historic real equity returns might suggest 9% p.a.
- A weighted average of the individual discount rates based on the proportions invested is used to discount the liabilities
- That would give $.8 \times 9.0 + .2 \times 4.0$ say i.e. ~ 8% p.a.
- Alternatively a notional portfolio intended to match the liabilities could be used to determine the weighted average of the individual discount rates
- Perhaps more like $.6 \times 9.0 + .4 \times 4.0$ i.e. ~ 7% p.a.

Examiners gave credit for sensible variations on this, i.e. assumed inflation, argument that 6% real return on equities not realistic, gross redemption yield in range 3.3% to 4.8%, different weights for notional portfolio (some bonds to match non-pensioners).

Mark to market approach

- This is a "replicating portfolio" approach
- Which compares to a portfolio of assets that closely replicates the duration and risk of the liability measure
- For the liabilities there is an implicit assumption that a set of bonds can be found to match the liability cash flows
- e.g. pensions with fixed increases, pensions with inflation linked increases
- From each set of bonds it is possible to derive a yield curve
- The yield curves can be applied to the corresponding projected benefits to determine a value that is consistent with the value of the replicating portfolio
- The appropriate yield curves are generally those relating to nominal government bonds and inflation linked government bonds
- Yield curve here curves upwards, suggesting a lower discount rate for pensioners (towards 3.3%) than non-pensioners (4.8%)
- In practice an "average" yield may be used as the discount rate
- i.e. maybe value all liabilities using ~ 4% per annum

Bond yield plus risk premium

- This is also a "replicating portfolio approach"
- Where for the liabilities the discount rates are based on bond yields
- i.e. 3.3% to 4.8% or average as under mark to market ~ 4% p.a.

- but then increased to take account of the returns expected on other asset classes
- Often referred to as an "equity risk premium"
- Historic data could be used to argue for (6.0 – 0.9) ~ 5% p.a. (1946 to date) or (5.7 – 3.5) ~ 2% p.a. (1970 to date)
- The level of the risk premium would depend on the actual assets held
- So apply the .8/.2 weightings to give discount rate in range ~5.6% to 8.0%

{Marks were given for well argued 60/40 split based on split of liabilities backed by equities}

- It may be constant over time or vary depending on the assessment of market conditions

For both asset-based discount rate and bond yield plus risk premium approaches:

- Must allow for the degree of prudence to be incorporated
- any equity "out performance" is not guaranteed so the scheme is still reliant on the strength of the employer covenant
- Prudence / weak covenant might suggest lower end of ranges.

Whilst most candidates were very comfortable reproducing the relevant core reading, fewer were able to demonstrate that they understood how to apply these in practice to derive appropriate discount rates. Many did not take into account that historic real returns were provided, so an inflation assumption was needed to determine a nominal discount rate. Very few students mentioned the issues of prudence or the impact of the employer covenant, which again suggests that many candidates struggle to bring together different parts of the syllabus to produce rounded solutions.

5 *Investments*

- Is there a range of investment options to satisfy members' risk profiles?
- And are there a suitable number (too many/too few?)
- Is there a "default" fund and is it appropriate?
- e.g. does default include lifestyling?
- Extent to which any default fund is used or switched away from will provide an indicator of member engagement
- Are the fund choices suitably invested, monitored and managed?
- Are the funds monitored regularly and are they performing satisfactorily?

- Is performance relatively poor or just in line with markets?
- Are the charges acceptable?
- Should any investment guarantees be offered?

Administration

- Is the scheme receiving an efficient and user friendly service?
- Are there agreed service standards?
- Compliance with relevant regulations?
- Are records and benefits calculations accurate?
- Low cost (value for money, if outsourced)?

Communication

- Need to decide what information should be given to raise awareness of scheme
- Do members have simple access to information
- And do they understand the risks they bear?
- Are projections of prospective benefits available that are easily understand
- And can they model different options easily?
- Ensure all communication is up to date
- including education / topical issues for members
- Use of different forms of media e.g. on-line
- Should a helpline be available
- Encourage feedback from members
- And ensure processes are in place to act upon feedback
- Compliance with legislation

Company considerations

- What were the original objectives?
- Does it aid attraction and retention of employees?

- provide adequate benefits (to allow retirement when company wants)
- with employee and employer flexibility
- Valued by staff
- Low cost
- Simplicity of design
- Tax efficient structures
- Minimal effort by company and trouble free
- Compliant with relevant law e.g. age, gender discrimination
- Are they obliged to provide the scheme
- ... and if so, are they providing the minimum level of contributions or more?
- Does contribution structure target company expenditure at those members that value them most?
- ... e.g. by matching sponsor contributions for members paying more
- What are other companies providing

Member considerations

- Maximise benefits
- easy to understand and operate
- Affordable (low contributions)
- What are the tax benefits of membership
- Are members offered independent benefit advice and support
- Suitable investment choice
- With investment advice
- Flexible
- Good communication process in place
- Security especially for dependants

- ...if there are protection benefits offered as well

There was a wide spread of marks, with some candidates scoring full marks. The stronger candidates:

- *used the structure in the question (as obvious as this may be, some candidates' solutions did not appear to be organised under the headings requested);*
- *made several points under each section and then moved on (note that the solution above includes many more points than required); and*
- *focused on the higher-level objectives of the review, for the sponsor (and members where requested) rather than minor practical issues.*

6 (i) Use of Actuarial Control Cycle

- Need to consider the commercial and economic environment
- And apply any professional guidance/requirements

Specify the problem

- First step of Actuarial Control Cycle is to analyse what the risks are
- ... and quantify the financial consequence of the risk events occurring
- Main risk to company is higher costs than expected
- ... failure to anticipate predictable increase in long term costs as scheme matures
- ... unexpected increases due to changes in employee turnover
- ... periods of high inflation combined with pressure to continue past policy of increasing awards
- Other risks include timing and volatility of payments
- Including requirement to potentially make payments at commercially unattractive times
- Analysis may conclude that problem is not as significant as FD considers
- But if the risks are not felt to be acceptable then ...

Develop the solution

- Consider reduction of benefits
- Consider and quantify appropriate methods of managing risks

- Consider actuarial models to project the contributions to and outgo of the scheme
- Make appropriate assumptions i.e.
- ... how many employees qualify for benefits each year?
- ... how much benefit (allowing for inflation)?
- Interpret results and consider implications
- Determine solutions and consider alternatives
- ... is PAYG appropriate or some form of funding?
- ... if funded need to consider appropriate reserves and contributions
- ... and investment strategy
- Consider sensitivities and scenario testing (stochastic models?)
- And communicate the solution in an understandable way

Monitor experience

- Identify causes of departure from expected outgo
- i.e. number of employees receiving awards more / less than expected
- ... and impact of inflation / discretionary increases to awards
- Particularly if scheme is relatively new so impact on employee behaviour is uncertain
- ... is the structure and level of awards appropriate given objectives of scheme?
- Feed experience back to the specifying problem / developing solution stage as appropriate

Whilst most candidates were familiar with the actuarial control cycle, only a minority recognised the issues that needed to be addressed. Specifically, the problem was not just the affordability of the awards, but also the sponsor having sufficient liquidity to pay the awards. Many candidates did not put sufficient emphasis on the key risks, nor did they apply the stages of the control cycle to the specific situation.

(ii) *Establishing an actuarial value*

- Need appropriate employee data
- ... including age/qualifying service/contribution information

- Full details on rules of long-service award scheme
- Any documentation on how/when awards are increased
- ... and any employee communications on either of the above
- Past turnover experience
- Company indications as to expected future changes
- Need to determine an appropriate model to allow for level and incidence of cash flows
- May extend to a stochastic model to assess variability/range of outcomes
- What is an appropriate funding method?
- ... given criteria such as security, stability, realism, flexibility
- Economic and demographic assumptions will be needed
- ... withdrawals, retirements, deaths, new entrants
- ... assumed rate of increase in awards
- ... investment return on invested assets
- Company's objectives are key to determining appropriate strength
- ... prudent if want to minimise risk of unexpected calls on company funds
- ... best estimate if want to minimise costs in short term
- Consider how company wants to pay contributions (e.g. % of monthly salary etc.)
- Treatment of any surpluses that build up may be important in this decision
- ... particularly as employees leaving shortly before completing a service milestone may result in a significant release of reserve
- Need to consider any relevant legislation on funding
- Company may also need to consider any relevant accounting rules

This was relatively straightforward, but few candidates scored well and many failed to state the obvious. A basic explanation of determining the benefits to be valued, selecting an appropriate measure, identifying appropriate assumptions, projecting the benefits, etc., would have scored well. Many candidates, however, provided detailed formulae, or simply listed the economic and demographic assumptions that would be needed. Given the instruction to "discuss", and the context of this question, the examiners encourage *candidates to consider what they would discuss in a meeting with or brief paper to a Finance Director who had expressed a wish to fund an arrangement, before they started carrying out detailed actuarial calculations.*

7 (i) *Covenant issues*

- the trustees would be less worried if the scheme was well funded and/or well matched
- Need to understand the reasons for the trading difficulties
- Need to meet the company to discuss the reasons behind the trading difficulties and future plans to increase profitability
- Together with the reasons for the suggestion to cease future benefit accrual
- Will the savings be re-directed to the pension scheme for example.
- Professional covenant advice is needed
- Role of overseas parent should be investigated
- Need to understand the structure of the business and the group.
- More regular monitoring of covenant is required
- Need to understand the differences between short and long term covenant
- Analyse the possible impact on existing deficit reduction plan
- Consider the use of alternatives to cash payments
- Consider any legislative impacts – e.g. debt on employer on business failure event

Some students did not restrict their answer to this part to covenant assessment issues i.e. information they would seek, from who, why they would need it, rather than e.g. considering specific investment strategy changes, or listing at length the various approaches in the core reading for assessing covenant.

(ii) *Security*

- Third party guarantees will increase member security without the need for immediate cash payments
- e.g. a guarantee from the company to underwrite the current recovery plan payments
- or a guarantee from the overseas parent

- depending upon the covenant of the parent itself
- or alternatively a bank guarantee could be put in place
- A fee is paid to the bank to arrange this guarantee

Other alternatives to cash payments include:

- A charge on the sponsors fixed assets
- whereby the scheme has a legal claim on specified assets of the sponsor
- However this may impact the sponsor's borrowing capacity
- and /or require permission from banks / other creditors
- Assets might not be worth much if company is in difficulties,
- ...but if the parent is unwilling or unable to provide support, there's a bit more security
- may seek higher priority for pension liabilities
- may apply limits to self investment
- could ask company to alter investment strategy if the company holds the power to select funds
- could apply limits on additional company borrowing
- Arranging for ratchets in contributions so that if the sponsor's financial position improves then the scheme shares in this improvement
- Or introduce contingent contributions based upon changes in funded status
- As the company is experiencing trading difficulties they may be unwilling or unable to give any company or bank guarantees
- Similarly they may be unable to give greater security for the pension debt over other creditors
- …again there's the point of refinancing that might mitigate this problem
- Might consider insolvency insurance if not prohibitively costly

Generally well answered – candidates that did not score well did not cover a sufficient range of options, or listed them without any further discussion of their possible value or otherwise.

(iii) *Key issues regarding one-off payment*

- Trustees need to ensure they minimise the risk of scheme being unable to pay benefits as they fall due
- So need to decide whether the one off payment solution is the best option for members
- For the solution to work really need cessation of accrual to be completed
- Buy-out deficit should be targeted if company is in distress
- What is the current deficit when securing the liabilities with an insurance company (buyout deficit)
- Need to get quotes from different insurance companies – if the business is competitive there might not be a "real" deficit at all
- How large is the one-off payment
- and will it eliminate the "buyout" deficit
- The current funding target may be inappropriate
- Could consider running the scheme as a closed fund using a very prudent (self sufficiency) funding basis
- Expert covenant advice needed
- together with details of the refinancing package
- If the payment is below the full buyout deficit, could the full amount be reasonably afforded by the company and / or the overseas parent company
- Or could a revised deficit payment schedule be put in place over a longer period to eliminate the full deficit instead
- If not could the one-off lump sum be increased at all?
- Is the offer of the lump sum preferable to probability of the sponsor failing with realistic likelihood of no further payments to the scheme
- ... and loss of jobs for active members as well as benefit reductions
- Legal advice is needed
- Legislative & regulatory guidance to be determined
- Investigate impact on members' benefits if one-off payment is accepted

- Are reductions to accrued benefits permitted in legislation (if scheme later falls into deficit)?
- Given there would no longer be a scheme sponsor and the scheme would enter wind-up
- Consider appropriate 3rd party guarantees
- and /or other alternatives to cash payments
- Transfer into parent's scheme if one exists and run off from there – may be "cheaper" for parent in the long run?
- Need to consider implications of business failure on the fund
- For example is there access to any form of central discontinuance fund

Whilst a minority of candidates scored well on this part, many failed to score half the marks available. Many missed key points such as the size of the payment relative to the deficit (on different measures), didn't consider alternatives or the risks to members of accepting the payment, or circled at length on minor issues.

8 (i) Data requirements

Item	*Reason*
Information relating to past and current operation of scheme	
• Trust Deed & Rules / scheme's legal documentation	• Powers and responsibilities of parties involved (sponsor, actuary) • Benefit levels
• Member booklets, announcements etc. • Trustee minutes	• May include further information on benefit levels not in main documentation
• Details of past discretionary practices	• Past policy and practice may not be explicitly covered in rules and booklets etc. • Pre-funded or not?
• Factors in use for member options such as early retirement, commutation etc.	• So options can be valued appropriately, particularly if not cost neutral on one or more sets of assumptions
• Scheme report accounts • or o Asset statement o Cash flows in and out	• Confirm value/breakdown of assets • And data for analysis of surplus • Appropriate allowance for expenses
Information relating to the future operation of the scheme	
• View of relevant parties on future discretionary practices	• Assist in deciding whether to (continue to) make allowance and to what extent
• ... and possible changes to benefits	• Impact on cost of future accrual (if prospective) or accrued liabilities (retrospective)
• ... and future investment strategy	• May influence assumption setting if liability valuation basis is linked to scheme assets
• ... and salary increases	• Assumption setting – particularly around allowance above general levels of earnings inflation, and promotional allowances
• ... and turnover / hiring strategy	• For demographic assumptions e.g. withdrawals, new entrants, early retirements including one-off changes
• Likely / potential changes in legislation	• Allow for known improvements to benefits, particularly retrospective, or • Might restrict funding flexibility e.g. assumption setting, deficit/surplus
• Sponsor covenant	• Determining appropriate degree of prudence in funding assumptions
• Industry / professional information on longevity experience / projections	• Setting appropriate mortality assumptions, particularly allowance for future improvements
Other information	
• Previous Valuation Report • ...subsequent actuarial advice	• To allow analysis of changes and as reference point for validation of results
• Economic data	• To help set valuation assumptions
• Purpose and objectives of Valuation	• To ensure assumptions/method/results are appropriate
• Timescale for valuation	• To assist in planning of work requirements

Most candidates scored well on part (i), particularly those who used clear headings to structure their solutions and ensure they provided the appropriate explanation for each item. A few candidates wasted their time, however, by including inappropriate detail (e.g. itemised contents of the accounts) or by listing membership data that the question stated had already been provided.

(ii) *Membership data checks*

- Membership reconciliation
- … separately for actives, deferreds and pensioners
- … compare to scheme accounts and/or employer data
- Reasonableness checks
- Basic validation that fields contain valid entries
- e.g. check that there are new members since the last valuation for an open scheme.. or blank data in a field which should have information for particular members
- Compare average benefit levels, ages, salaries with previous valuation
- .. e.g. average salary increase with expectations or average pension increase with rules / inflation
- Consistency of totals in membership data with information in accounts
- e.g... total salaries for actives with member/company contributions received or .. total pensions in payment in membership data and accounts
- Consistency between investment income and assets
- Minimum and maximum levels for benefits, ages, salaries
- Spot checks e.g. comparing last time's data with this time's data for an appropriate set of individual members
- Check data for individuals with highest liabilities separately

The better candidates covered the principal types of checks, with one or two examples of each to show they understood what this meant in practice.

(iii) *Data for cash equivalent*

- The funding valuation is a long-term planning exercise
- ... calculating an aggregate liability
- ... and determining future funding requirements at regular intervals

- Individual inaccuracies can cancel out over whole membership
- .. as long as approximations are not inadvertently biased
- E.g. using latest salary as basis for projection even if pensionable salary is averaged
- .. ignoring minor complexities in benefits that are not material for funding purposes over the whole membership
- Allow for revaluation not salary increases in calculations
- A cash equivalent is likely to involve a settlement of a liability
- ... and is an individual calculation
- E.g. transfer to another arrangement, divorce settlement
- Approximations might over or understate transfer value
- Respectively penalising the scheme or the member
- With no opportunity to correct things at a later date
- Transfer value may also take account of further demographic information
- E.g. actual marital status at time of leaving service (or date of quotation)
- So additional information might be needed.

The question specifically asked ***why the membership data might differ*** *for the two types of calculation (which as the examiners hoped candidates would explain, involved ongoing funding and the settlement of a liability). A number of candidates wrote at length on the different assumptions that would be made and therefore failed to score any marks. Other candidates did explain how the membership data might differ, but not* ***why****, thus missing out on the opportunity to pick up a few straightforward marks.*

END OF EXAMINERS' REPORTS