Actuarial Society of South Africa

EXAMINATION

20 October 2020

Subject F204 - Pensions and Other Benefits Specialist Applications

MARKING SCHEDULE

QUESTION 1

This question was the most poorly answered of the 3 questions. The question required candidates to explain the professionalism issues and process of a historical surplus distribution in a defined contribution fund. The 4 parts progressed the candidate through the issues that a pensions actuary would be expected to advise on, as a newly appointed actuary, in challenging circumstances.

i. Discuss the professional matters arising that you would need to consider in responding to the Chairman's request? **[8]**

This was a straightforward question and was reasonably answered by a number of candidates. Several candidates missed the professionalism issues and went straight into how they would go about distributing the surplus. This seems to have been a challenging one, but there were plenty of pointers in the question that if candidates went through them one at a time, they would have been able to make a number of the points easily.

- Your appointment as valuator is a statutory role
- Your role as the actuary includes specific functions in order to fulfil the requirements of the Pension Funds Act
- Included in this is the accrual of investment returns to member accounts in a DC environment
- The actuary also advises on the distribution of surplus
- This is therefore not the role of the auditor - but the function here is one of the actuary
- As the actuary, you will however rely on the audited financial statements for the market value of the fund's assets – should work together with the auditor
- The actuary cannot approve the proposal without doing the work required to satisfy himself/herself that the proposal is based on sound actuarial principles and the appropriate course of action is taken
- Would need to investigate the source of the surplus and recommend a distribution based on when and how the surplus arose
  - Active members and pensioners have been stakeholders of the fund historically
- Both actuary and auditor are new – so have no history on the fund
- Possible professional issues if there is an historical error found that was made by previous actuaries – how to engage with the previous actuary, maintain respectful engagements, give the previous actuary an opportunity to comment before advising the client of any error
- Concerns around the client wanting to rush any investigation
  - If this is rushed, or just approved, the actuary could face recourse or disciplinary action if the proposal turns out to be inappropriate
- Also concerns if the client is not willing to pay for the investigation
  - Possibly understandable from the client's point of view, but the work will need to be done properly and taking short cuts could potentially lead to professionalism issues if errors
- The actuary has whistle-blowing responsibilities and is required to report to the regulator any matter relating to the affairs of the pension fund, which, in the opinion of the actuary, may prejudice the fund or its members.
- Surplus distribution would be governed by fund rules and legislation
- Any conflicts of interest that may arise would need to be dealt with appropriately

ii. Explain in detail the checking process you would conduct to investigate the source of the surplus? [12]

A straightforward question at Fellowship level and these checks are also detailed in the F204 notes, so it was expected that well-prepared candidates would benefit from this and generate many of the required points. This question expected candidates to make assumptions about the fund's valuation exemption status as this would have helped to generate additional checks, depending on the status of the fund. A reasonable attempt by most candidates.

- Assuming that the fund is valuation exempt, there may not have been a recent valuation, if not would rely on financials
- If there is a valuation, would go back to the first one which showed a surplus, and see the reasons given in the AOS
    - Would still need to do detailed checks, depending on reasons given, and also why no redress has been done to date
- If valuation exempt, would do high-level checks year by year on the financials, starting with the most recent year, and then working backwards
- Would start by looking at the financials to see when the unallocated amount first arose
    - Either a large unallocated arose in a single financial year
    - Or small unallocated amounts have arisen each year and accumulated to current amount
    - Would expect any unallocated amounts to grow by some form of net investment return (net of investment fees) each year
    - Check historical bonus philosophy of the Fund - could have operated on interim and final rates
- Would do the detailed year by year checks going backwards until the year when the unallocated amounts first arose

Detailed checks would then be done separately on the accumulation of the assets and liabilities:

- Data checks on the liabilities
    - Reconciliation of opening liability and closing liability
        - Members present at the beginning of the year are present at the end
            - If not, for members there at the end but not at the beginning, check for new entrant
            - If not, for members there at the beginning but not the end check there is an exit and a benefit payment
    - If no benefit payment, then an outstanding benefit liability is held
            - The amount of benefit payments or outstanding benefit liabilities are equal to the exiting members' shares of the fund
            - Check membership movement (reconciliation of membership) against liability reconciliation
        - Net contributions towards retirement that have been received by the fund have been allocated to member records.
        - Actual investment returns allocated to member records correctly.
        - Check any s14 transfers in or out of the fund (correct amount transferred, including net investment returns?)
            - Allowing for exits between S14 effective date and actual transfer date (Check Form Gs)
        - Contributions not allocated would contribute to a surplus

- may indicate a new member not yet on the admin system if all other member contributions are correct
- check any additional voluntary contributions made by members (allocated correctly)
- Contributions received after year end are correctly accounted for
- Check for consistency of salaries year on year – admin system may calculate contributions based on salaries, or take actual contributions received and work back to salaries.
- A check on salary growth may highlight an issue in contributions
- Check for overallocation of expenses
- Check for surplus arising on any new pension purchases for new retirees

- Data checks on assets
  - Reconciliation of total assets – opening values plus inflows, less outflows, plus net investment returns – check against closing values
  - Can do this check for each investment portfolio. Surplus may have arisen in a particular portfolio, depending on how the fund's investments are conducted – one portfolio for all, or member choice.
- If investigation goes back to the pension outsource – check the amount paid to the insurer is correct, and what surplus would have possibly arisen as a result of the 'release' of pensioner liabilities

iii. In light of this, outline the steps for the technically correct approach to allocate of this surplus amount? [7]

Credit was given for any reasonable method of distribution, but candidates seem to have missed that the question asked for the steps they would follow, so lost marks by offering a general approach. set out how they would determine the lump sum multiple at each age and to set out the assumption they would make. Poor attempt by most candidates.

- Starting in 2012, calculate the net investment returns that were earned on the portfolios that the member's shares of fund were invested in - to date
- This could be done across all asset portfolios as a single return if all members are invested in one portfolio, or per portfolio if members are invested in different portfolios if there is member investment choice
- Assuming the checks have shown that the opening value of the liabilities at 2012 is correct, build up individual member records from 2012 to date
- This would be done by accumulating the opening values per member, adding net contributions to retirement, less any explicit expenses or deductions and increase with net investment returns (positive of negative) appropriate to the member.
- Accumulating these to 31 December 2019 would give the technically correct shares of fund for active members at this date
- Accumulating these to the date of exit for all members who have exited will give the technically correct benefit at date of exit
- The active member's admin records would be adjusted accordingly to reflect the correct values
- The calculated benefits for exited members would be compared to the actual benefits paid and top-up benefit payments would be made – allowing for late payment interest to date of payment of top-up.

iv. Identify the issues do you need to highlight to your client as a result of this. [6]

Most candidates focused on the potential professional indemnity claims, with few dealing with broader issues or the legislation around minimum benefits. Poorer candidates did not feel that the employer would have any liability, as the fund is defined contribution. Poorly answered by most candidates.

- In terms of minimum benefits legislation and the rules of the fund, members are entitled to the benefits calculated – allowing for full net investment returns on their contributions.
- These are now under-funded, and the fund is effectively in a deficit
- it is the employer's responsibility to ensure the fund is fully funded.
- Surplus belonging to the active members has effectively been used to partially fund the pension outsource – which is an inappropriate use of the surplus
- The trustees would have had to approve the pension outsource, and by implication, the use of the fund's surplus, and are therefore possibly exposed
    - Trustees should have enquired about the surplus previously?
    - Also the fund's previous advisors?
- The exit benefits for members will need to be corrected to be at least minimum benefits
- The fees being paid to investigate the historical surplus and do the redress payments and administration also need to be paid, further exacerbating the problem

QUESTION 2

i. Compare a single portfolio investment strategy to a life stage investment strategy with member choice and include the advantages and disadvantages of each. [13]

Fair attempt by most candidates but all candidates failed to generate sufficient points to score well in the question, particularly in explaining the two options fully.

Explain each strategy

- A single portfolio ("SP") investment strategy considers only 1 investment strategy that is applied across the whole fund.
    - The same strategy will apply for all members and potentially all reserve accounts, if any
    - All members will receive the same investment return declaration
- The strategy would be based on an underlying asset class mix that would be intended to provide the targeted returns
    - The strategy could be implemented with a single manager in a balanced portfolio
    - Through a single absolute return type portfolio
    - Or through a combination of various specialist investment managers/mandates

- A life stage ("LS") investment strategy considers a range of investment portfolios/strategies that apply as a member gets closer to retirement age
- The aim is to match at a broad level the expected risk and return that a member of a certain age can target based on the member's own expected time horizon;
- The longer the investment horizon the more risk and hence greater return the member can target
    - Members will be allocated into various portfolios based on their age
    - They will move from portfolio to portfolio based on predetermined age rules as they near retirement
    - Members will therefore receive only the returns earned on the particular portfolio that they are invested in at a point in time
- The strategy can be developed with a single manager where each portfolio has a specific mandate to match the underlying target of the various life stage portfolios
    - The strategy may make use of a range of absolute return portfolios at the different life stages
    - Or may use some combination of specialist investment mandates per portfolio
    - Or a range of common underlying specialist building blocks combined in various ways across the asset classes to achieve the desired targets

Advantages and disadvantage of each (Considered from both the Members and the Fund)

- SP is simple to administer
    - requires a single return to be declared across all members
    - Investments and disinvestments can be netted off at a fund level
    - and only broad matching of the member and investment portfolios is required
- LS portfolio requires reasonably complex member administration platform to ensure that the members are correctly allocated to the various portfolios based on either their age or individual choices
- Each member record would need to be credited with the actual return earned on the underlying portfolio applicable to the member
- Matching of the member records and underlying investments is critical to ensuring the fund does not suffer significant investment mismatches and processing errors
- At each valuation, the valuator needs to certify that the structure of the assets is suitable and adequately match the liabilities in total and at portfolio level.
- Under the SP model the Trustees have only a single investment strategy to monitor, monitoring the underlying investments relative to their chosen strategy and benchmarks
- The LS model requires Trustee to consider both the underlying strategy for each portfolio as well as the broad strategies as they compare to one another relative to the expectations communicated to members
- Both strategies have the advantage of being able to be implemented at a very high level (absolute return or multi-manage type portfolios) with little ongoing input required from the Trustees

    - or alternatively at an asset class specific level allow Trustees to be as involved as they feel appropriate
- For members the SP is simpler to understand
    - Allows an easier understanding of the actual returns that could be achieved or have been declared
- However younger members do not potentially maximise the returns that they could achieve for their risk appetite and investment time horizon
- Older members may find themselves more exposed to investment risk than they would desire as they approach retirement
- A life stage model requires more communication and understanding from members
    - Members would need to understand the underlying portfolios and their intended targets
    - The rules around switching may be complex and tricky for members to understand
    - Younger members would however benefit from higher targeted returns over a longer period of time
    - Where older members are offered protection as they near retirement
    - The model however does not take into account market factors or any predictive indicators and would switch only based on age,
    - this may have the disadvantage of switching members at inopportune times

ii. Propose an appropriate communication strategy setting out all the considerations that would need to be taken into account in such a strategy. [9]

Candidates who were able to think through all the possible areas where communication would be required, and the whats, whens and hows of this communication scored well. Credit was given for any valid forms / mediums of communication

- Any communication to members on a change that is significant to their future benefits would need to be communicated in a clear and easily understandable way
- This should take into account any legislative requirements
- As well as taking consideration of appropriate good governance and TCF principles (PF130)
- The Board are accountable to members in respect of the benefits provided for in the rules and through expectations created through member communication
- Critical that the communication is therefore accurate and presents a fair picture to all members allowing sufficient information for members of all financial literacy levels to fully understand the implications of the changes being communicated;
- The communication strategy would need to consider:
    - The type of communication and medium used to communicate
    - The structure of any written and presented information
    - That it contains sufficient general and member specific detail

The strategy could include:

- Detailed written communication on the strategy itself which could take the form of a member booklet and should include:
    - Explanation of the current arrangement
    - Broad overview of the proposed new arrangement
    - Include a detailed comparison of the two strategies
    - Set out specific detail on each of the underlying investment portfolios making up the strategy which would include asset class, mandates and at least high level benchmarks in a form understandable to members
    - Detail on how the automatic switching would take place
    - portions of the written communication could take the form of Q and A style queries as well as simplistic examples
- The fund could consider breaking the communication into smaller understandable sections and distributing these over a period of time leading up to the implementation so that members are not overwhelmed by the detail
- Timing and frequency of the communication would need to be decided
- Individual member benefit or projection statements setting out the potential impact on member benefits
    - This should include a projection in line with the Fund's targeted expectations
    - As well as some form of sensitivity analysis or stochastic range of outcomes to ensure members understand both the expected targets as well as the range of outcomes around those expectations
- The strategy could include initial member focus groups
    - The overall strategy could be presented to the focus groups with feedback used to amend as required the communication strategy
    - This may inform the broader Q&A communication that is distributed
- Member roadshows and presentations could be included to allow members the opportunity to interact with the Fund on the new arrangements and to allow for feedback to the Board of Trustees
- The Fund may consider making financial advisors available to members to discuss individual concerns or strategies
- The Fund or administrators call centre should have sufficient information on hand to answer general queries regarding the strategy, perhaps in the form of a Q&A, this may include a call centre or section of the call centre with licensed financial advisors

iii. Using reasonable assumptions and a potential range of sample members demonstrate to the Trustees whether or not the members' complaints are valid. [17]

Candidates were expected to establish an appropriate assumption set, and decide on the range of members that should be looked at. It was also important to look at the future accumulation of contributions, not simply to compare the returns. Reasonable attempt by some candidates.

Assumptions:

- Assume members are simply comparing effective returns and projected benefits
- Assume members have not considered the risk surrounding those returns, especially closer to retirement
- Additional assumptions:
  - Don't require a salary, acceptable to assume
  - Assume salary increases with inflation only, no merit or real increases
  - Ignore any pre-retirement decrements
  - Assume for simplicity contributions at year end

- Determine the future accumulation factor at each phase for 4 member scenarios (show min 3 members to properly demonstrate but would need a range of ages)

  Used new entrant age 20
  30 year old – note only concerned with future past is unaffected
  40 year old – note only concerned with future past is unaffected
  50 year old – note only concerned with future past is unaffected
  55 year old – note only concerned with future past is unaffected

  Accumulation factors:

- Stating the method – Using annuity certain accumulated to end of each phase and then projected to retirement through phases or any other method to find end result correctly allow for varying accumulation rates over periods

Life Stage	Old Strategy	New Strategy
60 – 63	3.122	3.030
55 – 60	6.093	5.362
50 – 55	7.413	6.161
40 – 50	19.991	18.242
30 – 40	29.592	32.669
20 – 30	43.803	58.505

Total for accumulation factors if marked separate from results

- Comparison: using table above can compare the future benefits at various ages:

Life Stage	Old Strategy	New Strategy	Better returns
60	3.122	3.030	Old
55	9.214	8.392	Old
50	16.627	14.553	Old
40	36.618	32.795	Old
30	66.210	65.464	Close
20	110.012	123.969	New

Total can be sum of = 1 mark per age for correct result old and new, noting which strategy greater at each age

Conclusion demonstrated:

- Considering only investment returns and the projected benefits members are likely to have seen the future projections look worse for all ages 30 and above.

iv. Taking into account the results above propose to the Trustees a number of adjustments that might further improve the proposed strategy. [10]

This question was well answered by some, and very poorly answered by others, and seemed to distinguish between the stronger and weaker candidates.

- The scheme was likely designed for new entrants only,
- showing a significant improvement and
- a significant reduction in risk at retirement
- Must have assumed members take cash at retirement or that the annuity strategy would have been with profit or some other guaranteed annuities with fixed pricing
- If this is not the case could look to adjust the final stage to be more appropriate

- The comparison makes sense given the lower returns on the more conservative portfolios closer to retirement
- Average age of members likely to be between 30 and 50 years and hence would have seen lower projected benefits and hence the complaints

- This demonstration does not take account of the risks faced by members closer to retirement
    - where their entire savings are potentially at risk in the previous strategy,
- This is a flaw in a single projected value, it is harder to demonstrate the risk reduction
- Stochastic modelling might show better probability of outcomes but may be difficult for members to understand

- Generally speaking, the strategy over the last few years does appear to be more conservative than the “typical” life stage model

Some options to consider:

- Could look to blend the various portfolios over the life staging periods
    - Example, between age 50 to 55 could take 80% aggressive, 20% stable then 60% aggressive and 40% stable etc to reach 100% stable from age 54
- Could start life staging at age 55 rather than age 50 which may be too far from retirement, i.e. stage over 8 years rather than 13 years
    - If reduced period of time would then still blend the portfolios
- Could remove the conservative portfolio and blend stable and MM

In adjusting the strategy:

- Need to consider both new entrants and the current members and their savings to date
- Need to look at deterministic, deterministic sensitivity and stochastic modelling results for most appropriate blend
- Might not satisfy all members on a returns only basis
- could therefore offer (with communication) individual investment choice
- allow members to elect to remain or adjust their portfolios as they believe appropriate
    - members to elect from the same life stage options

QUESTION 3

Set out a detailed assessment of the two options:

- **explain the methodology for each option;**
- **identify the advantages and disadvantages and associated risks of each option; and**
- **recommend one option to Blue Sky with your reasons.** **[18]**

Most candidates demonstrated an understanding of what was required, but did not cover the issues in sufficient detail. Generally well answered.

Defined benefit basis:

- Under a defined benefit basis the Fund would make members paid up by determining the current value of their deferred pension
- using the current pensionable service
- current pensionable salary as defined under the rules
    - including any averaging
- accrual factor relating to past service
- all as at the member’s exit date
- The deferred pension would then be increased to retirement
    - Could be at same rate as pension increases, or
    - in some cases this could be by a measure greater than pension increases,

    - example inflation if pension increases are a percentage less than 100% of inflation or inflation +1% where pension increases are inflation targeting
- On reaching retirement age the member would then be entitled to start receiving this pension
    - A portion may be commuted based on the commutation factors at the time
    - A member may be able to choose to retire early/late and start receiving the pension earlier or later
    - but this would then require an adjustment factor to take account of the increased or reduced life of the pension
- This had the advantage that the benefit basis does not change
- The member knows the current structure and has reasonable certainty
- Albeit dependent on increases granted by the Fund
- The actual increases if any are at the discretion of the Fund, and approved by the Employer for whom the member no longer works
- There may be no incentive for the fund to protect other than the absolute minimum value of these pensions
- These increases are unlikely to match the increases in salary and, as such, compared to the pension had the member stayed in the Fund, the pension in respect of this service could be significantly lower
    - Resulting in overall lower retirement savings over his full career
- The Fund would need to determine some basis for deducting the expenses of managing these records
    - This is however likely to be an implicit margin determined as part of the pension increase determination and not fully transparent to members
- If the Fund provides the option to transfer the capital value of the pension this is likely to be on terms that are more beneficial to the Fund rather than the member
    - i.e. commutation factors typically protect the fund
    - and don’t include margins for all contingencies
- Under this scenario the Fund is at risk in providing the guarantee pension payable for the life of the member
    - Fund faces investment risk
    - The capitalisation factors may change over time as mortality improves
    - or as the underlying economic conditions change (mortality risk, valuation basis risk)
    - The Fund may not be able to recoup these strains by reducing pensions or lowering pension increases
- Based on the introduction the Employer might support this type of arrangement as this fits with their current paternal motives
- Which would then need to be weighed against the risks that the sponsor picks up for individuals no longer in its employment and most likely working for a competitor in the industry

Defined contribution basis:

- Under this option the Fund would convert the members accrued benefits to a lump sum amount
    - The conversion might be based on full actuarial reserve value
    - Or a capitalised deferred pension determined by the Fund's actuary
    - Or the Minimum Individual Reserve as per the PFA

- The Fund essentially capitalises its risk at the time that the benefit is converted to DC
    - A conservative conversion basis might prejudice the fund at a later date when it could no longer recover the difference
    - A weak conversion value (or minimum benefits) might prejudice the member and locking in the capital at exit
- The capitalised benefit would then need to be segregated either physically or notionally and accrue actual fund investment returns
- The Fund does not operate a DC basis and as such would need to develop policies around the declaration of returns, managing mismatches and processing errors
- There should be no cost to the Fund of passing on these actual investment returns as the risk of poor performance lies with the member
- The member will have little or no influence over the investment strategy and returns earned
- They will in all likelihood benefit from reduce investment and administration expenses as these would be on an institutional basis
- The fund would need to agree an admin fee deduction which would then be debited to the member's record, this would be administratively a simple process
- It may be easier under this option to allow members to transfer the capital value to another arrangement
- On retirement the Fund could then allow members to purchase a pension in the Fund
- This does however mean that they are taking back the future investment and mortality risks
- A margin could be built into the purchase factors where members have the choice of accepting or not
- This does allow for some selection against the Fund which needs to be managed

Both options:

- Under either in Fund option the member has the advantage of being able to secure an in-fund pension at rates better than what are likely to be available in the market
- However, both options are likely to have the disadvantage that the member would not have flexibility in the actual benefits received
    - Spouse pension
    - Death in retirement
- The fund could make available the option to transfer the capital value

Recommendation:

Credit given for the recommendation and the reasoning. Would expect the reasoning to cover:

- Balance of assessment of advantages/disadvantages for the fund (DC perhaps better)
- Balance of assessment of the advantages/disadvantages for the member (DB perhaps better)
- Overall balance between fund/member leading to a recommendation