Actuarial Society of South Africa

EXAMINATION

21 May 2025

Subject F204 - Pensions and Other Benefits Specialist Applications

EXAMINER’S REPORT

Overall this exam gave sufficient opportunity for candidates to demonstrate mastery of the subject matter, and there were many marks available, allowing for candidates to score well.

QUESTION 1

This question should have been straightforward and was reasonably well answered. Key to part ii. calculations was working out the accrual rate that applied to the previous benefit structure.

i. **Assess the advantages and disadvantages of the previous benefit structure. [5]**

Advantages (previous benefit):

- Needs based, providing benefits on death to members with spouses
- And a lump sum for immediate expenses
- Assumed to increase automatically as a new dependant is added through marriage and as salaries increase
- Generous by industry standards
- especially for new entrants as benefit is based on full prospective service and members with spouses
- Members are likely to all pay the same contribution in respect of this benefit (since the same benefit applies to all), so it's good value for older members with spouses
- Easy to understand and calculate benefit level
- High flyers (with higher than average salary increase) will enjoy bigger benefit

Disadvantages (previous):

- Actual benefits can differ significantly between members with the same age, salary and service – might seem inequitable to members without spouses
- Members are likely to all pay the same contribution in respect of this benefit, which is poor value for younger members or members with no spouse or longer serving / older members with high member accounts, as benefit funded partly by member's shares
- Generous benefits imply higher costs than industry. Some members may prefer higher net retirement contributions
- Generous benefits by industry standards and unlikely to be reciprocated should member change employers or retire. Cost of buying additional cover can be prohibitive at that stage.
- No benefit payable to dependent children

ii. a. Determine the death in service benefits of the above two individuals under both the new and previous arrangements assuming they had died at the point when the benefit was changed, i.e. on 1 January 2020. [7]

General:

Married and the Spouse is same age as member

Pension accrual rate = 80% / 40 yrs = $1/50^{th}$

Pension Benefit = min(past service + future service; 40yrs) x (1/50) x 50% x Salary

Lump sum = 2x Salary

Mr Nkosi value of death benefit:

min(5 + 65 – 25; 40) x 2% x R50 000 x 0.5 x 22.52 + 2 x R50000 **= R550 400**

Mr Mnisi value of death benefit:

min(15 + 65 – 45; 40) x 2% x R200 000 x 0.5 x 18.823 + 2 x R200 000 **= R1 717 610**

Current benefit:

Mr Nkosi value of death benefit:

6 x R50 000 + 22 000 **= R322 000**

Mr Mnisi value of death benefit:

6 x R200 000 + 400 000 **= R1 600 000**

a. Compare the benefits in respect of each individual as well as between the two individuals at that date. [4]

Mr Nkosi: Old / new = R550400/R322000 = 170.93%

For Mr. Nkosi the old benefit is significantly greater

Mr Mnisi: Old / New = R1717610/R1600000 = 107.35%

For Mr Mnisi the difference between the old and then new benefits is much less significant

Comments:

- Relative to the old structure little has changed at this point in time for Mr Mnisi while Mr Nkosi's spouse will have much lower benefits
- As a multiple of salary the old benefit would have given Mr Nkosi about 11 times his salary while it would have given Mr Mnisi around 8.6 times his salary
- And as such the level scales are indicating an inequity in benefits
- Appears as though design of scheme was in line with simply average age of population hence Thando has equivalent benefits

iii. Repeat the calculations in ii. at the later date and explain the changes that have been seen in relation to the relative benefit structures. [7]

Previous benefit:

Mr Nkosi value of death benefit:

min(5 + 65 – 25; 40) x 2% x R110 000 x 0.5 x 21.834 + 2 x R110 000 **= R1 180 696**

Mr Mnisi value of death benefit:

min(15 + 65 – 45; 40) x 2% x R265 000 x 0.5 x 17.444 + 2 x R265 000 **= R2 147 931**

Current benefit:

Mr Nkosi value of death benefit:

6 x R110 000 + 100 000 **= R760 000**

Mr Mnisi value of death benefit:

6 x R265 000 + 500 000 **= R2 090 000**

Comparing the old and new benefits:

Mr Nkosi: Old / new = R1180696/R760000 = 155.35%

For Mr. Nkosi the old benefit is still greater but the difference has reduced

Mr Mnisi: Old / New = R2147931/R2090000 = 102.77%

For Mr Mnisi the difference between the old and the new benefits is smaller, but old still slightly higher

Assuming reasonable expected salary and return assumptions on the DC benefit looks to be moving closer to point where 6 x multiply may in theory be appropriate

For those around or older than the average age at the point the benefit changed

Mr Nkosi – new benefit closer to 10.7 times salary, for Mr Mnisi this is 8.1 times salary (both benefits reducing, Mnisi proportionately more than Nkosi)

The growth in DC shares of fund does not keep pace with the increase in the value of the old benefit

iv. Evaluate the validity of this complaint. [5]

- The complaint has merit
- Old structure provided for benefits that reduced with age,
  - as need perhaps reduced
- Under new structure older members get the same multiple while still having a growing MS and thus greater relative benefits
- Old structure would have given Mr Nkosi the higher benefit relative to multiple of salary and can assume this was on needs-based design, argue younger members need higher benefits for younger spouse, longer period
- effectively increasing benefits with age
- This has therefore prejudiced the younger members
- And if there is a fixed contribution to death benefits there would still be cross subsidy between young and old
- Caused by providing the same multiple across all ages where mortality is expected to increase with age and hence costs of providing benefit would increase
- And as such the level scales are indicating an inequity in benefits

v. Propose an alternative benefit structure that would address the concerns raised. [3]

- Age-related multiple of salary benefit scale
- Plus return of DC member share
- Multiple reduces as member ages
- as need perhaps reduced
- as costs increase
- Also DC benefit increases
- May appear more equitable
- Could derive the scale from a unit cost per age, so that a fixed contribution rate would not result in cross subsidies

Other options accepted – lower multiple, plus voluntary buy up etc. with justification

QUESTION 2

This question focused on pre-retirement investment strategies in a DC fund and how these integrate with post-retirement annuity options. It focused on 3 types of annuity. This was the question the candidates scored the highest on of the three.

i. a. Explain the 3 types of annuities. [9]

CPI Annuity
- Annuity guaranteed for life
- With annual increases equal to CPI (probably with a few months' lag)
- Usually with a zero increase if CPI is negative
- Options to add spouse pension, guarantee period, 13th cheque etc
- Any options will reduce value of starting pension.

With-profit Annuity
- Annuity guaranteed for life
- With annual increases dependant on investment returns (often smoothed); and
- The post retirement interest rate the annuity was purchased at (lower PRI, higher increase)
- Increases might also be adjusted for mortality losses / profits
- Increases are not guaranteed but cannot be negative and cannot be taken away once granted
- Options to add spouse pension, guarantee period, 13th cheque etc
- Options reduce value of starting pension.
- Traditional with-profits annuities less transparent than newer dynamically hedged annuities as far as returns and increases are concerned

Living Annuity
- Retiree selects annuity amount (drawdown) once per annum. Between 2.5% and 17.5% of capital
- Capital credited with investment returns and debited with annuity payments and expenses
- Investment return is based on portfolio(s) selected by the retiree.
- No guarantee on the level of, and duration of, the annuity
- On death capital can go to spouse / beneficiaries
- Usually and upfront fee / commission with ongoing investment fees, administration fees and advice fees
- Can transfer to another provider

b. Assess the risks they pose to a retiree. [6]

CPI Annuity

- No investment risk, longevity risk or expense risk for the retirees once purchased.
- Price moves with ILB yields so there is an initial pricing risk (prices move over short period) but this can be mitigated against
- Most policies do limit increase to a maximum amount if CPI is very large
- And remove any guarantee if there is a government default on ILBs
- Retiree exposed to the risk that insurer goes insolvent
- Cannot transfer annuity to another provider. Not generally a problem.
- By far the least risky of the 3 options

With-profit Annuity

- Increases depend on investment returns so retirees are exposed to some investment risk.
- Longevity risk is removed unless mortality profits / losses are passed on with annuity increases. Depends on product.
- Administrative expenses are priced in up front so no risk for the retirees once purchased. Investment expenses are recovered from returns and hence result in lower increases so some expense risk.
- Pricing risk is lower than inflation guaranteed annuities but does vary with the type of with-profit annuity. Traditional WPA tend to be price stable, dynamically hedged less so.
- Retiree exposed to the risk that insurer goes insolvent
- Cannot transfer annuity to another provider. However, insurer may provide different investment options to transfer to depending on the annuity type.
- Overall less risky than living annuity, more risky than inflation guaranteed annuity.

Living Annuity

- Retiree is fully exposed to investment risk and longevity risk.
- Expense risk, particularly ongoing investment, administration and advice fees also fall on the retiree.
- Retiree is required to make decisions about annuity drawdowns and investments on a regular basis. Risk that older retirees may not be able to do so.
- Overall the most risk of the 3 annuity types for a retiree. Essentially the retiree has to manage investment, longevity and some expense risk.

ii. Describe what information Fund Y should have provided to Member X over the years of membership. [6]

- A member booklet setting out the contributions and benefits on joining the fund. It would also have set out the investment strategy and options. This should have been updated from time to time.
- An annual benefit statement showing the build-up of his fund-credit over the year. It might also have set out his current risk benefit and a form to update the beneficiary nomination if needed.
- Not as common 35 years ago but more common recently, a projection statement showing his likely retirement pension under different investment return (and possibly annuity) scenarios. Guidelines on how to improve the retirement outcome through higher contributions might also have been included.
- Retirement benefits counselling. Initially to explain the fund benefits and options but more recently to focus on the options at retirement and how to choose the right investment option for the desired annuity at retirement.
- Communication setting out the default investment strategy and the member choice options.
- Communication regarding the annuity strategy
- Regular Trustee communication highlighting investment performance, benefit changes, rule and legislative changes etc.
- Communication on legislative changes and its impact on members.
- Investment return update, at least annually but possibly monthly.

iii. Discuss the issues Member X should be considering in preparation for retirement. [4]

- Check how Fund Credit now compares to what was expected at retirement. Can allow for next 3 months contributions. Still on track?
- Default investment strategy targets with-profit annuity at retirement. Get a WPA quote.
- But also get an inflation guaranteed annuity quote. Volatile pricing might make this an attractive option (but check again closer to retirement)
- Consider immediate need for income on retirement. If no immediate need (other savings, contract work etc) consider deferring retirement benefit if rules permit. Could also transfer to RA if needed.
- Consider if a commutation amount is needed and the impact on the resulting annuity.

- Investment option. Consider switching to Balanced or ILB portfolio if decision is not to go with a with-profit annuity but rather go with a living annuity or inflation guaranteed annuity.
- Get necessary retirement claim forms and understand the submission process. Get any required supporting documentation required.

iv. Explain the points you would make in responding to Member X. [6]

- If no guarantee period and no spouse's annuity is opted for, the annuity under a with profit-annuity or inflation guaranteed annuity will cease on the death of the retiree.
- No further benefit is payable in respect of the annuitant, unlike a living annuitant.
- For an annuitant who dies soon after retirement, this represents poor value for money (debatable whether this matters as the annuitant is dead).
- However, the insurance company has not "taken the money". In pricing the WPA or IGA, the insurance company will allow for life expectancy and recognises that annuitants who die earlier than expected will subside those who live longer.
- By not paying out the remaining capital, the net effect is an overall higher starting annuity for all WPA or IGA annuitants.
- For example, under a living annuity, in order to target an income that increases with inflation, an initial drawdown rate (annuity / capital) of no higher than 5% would be appropriate. However for a WPA targeting inflation increases (and possibly an IGA depending on market conditions) the annuity / capital might be 7%. The 2% difference is the result of not paying out any capital on the death of the annuitant under the WPA / IGA.
- If the idea of not getting anything back on early death under a WPA / IGA is not acceptable this can be mitigated by adding a guarantee period (minimum number of annuity payments) or adding a spouse annuity (if applicable).
- However this will reduce the starting annuity i.e. the 2% mortality enhancement will reduce.
- If a spouses' pension is opted for in an IGA/WPA, there is some protection for spouses' for their lifetimes
- How this compares to the residual amount left to beneficiaries under a living annuity depends on when the annuitant dies

v. Prepare a brief response to the trustee that covers pricing and other barriers to take up. [4]

- The Trustee is correct, the price of IGAs is volatile.

The reasons for the IGA being unpopular are more likely due to:

- The WPA is the annuity strategy and the default investment strategy targets this with the Balanced Portfolio at retirement i.e. more likely than not, the IGA will be "expensive" compared to the WPA at most points in time.
- Member's investment advisors prefer to sell living annuities. While living annuities have some advantages, higher fees for brokers also plays a big role here.
- The ILB/IGA option is hard to understand, especially as stable income (versus stable Fund Credit values) is harder to explain.
- A member who is interested in an IGA can invest in the ILB Portfolio prior to retirement. The value of this portfolio should behave similarly to the price volatility of the IGA i.e. although both values are changing, the retiree should be able to buy the same level of annuity regardless.
- However, the ILB Portfolio pricing can also be volatile compared to the Balanced / Stable Portfolios and care must be taken as to when and over which period to switch into the ILB Portfolio.

vi. Explain the workings of such a hybrid annuity including its advantages and disadvantages. [7]

Workings

- The hybrid annuity is set out as a living annuity and the same drawdown limits and annual drawdown revision apply as for a living annuity.
- Similar investment options apply as for a living annuity but one of the investment portfolio options is to invest in a guaranteed annuity (almost exclusively a WPA).
- The idea is that as the annuitant ages a great portion of the living annuity is allocated to the WPA portfolio. Ultimately at a certain age, the living annuity can be fully invested in the WPA portfolio.
- The annuitant cannot switch out any investment out of the WPA portfolio.
- However, depending on the WPA product, the annuitant can change the underlying investment portfolio.

Advantages

- Initial full living annuity profile means that capital is returned to beneficiaries on death. Easier sell to some retirees.

- +/- brokers still earn higher fees as per a living annuity, hence more likely to end up with a guaranteed (appropriate) annuity in later years.
- Gives greater flexibility as to when to purchase WPA. Could get a better deal than purchasing a WPA at retirement.
- +/- More flexibility as to initial annuity levels and investment options

Disadvantages

- Complexity, especially on when and how much to move to the WPA portfolio.
- Potentially will also cost more to administer than a stand alone living annuity or WPA.
- Although this could be done on a formulaic basis agreed to at inception based on age or duration.
- The value mortality dividend (the 2% extra under a WPA) reduces as a member ages. From a present value point of view, better to go into the WPA earlier
- Can potentially exceed the 17.5% drawdown percentage where the WPA is a large part of the living annuity. This is overcome when the entre living annuity is in the WPA (can convert to a WPA outright)

QUESTION 3

Parts i. and iii. were reasonably well answered, but candidates did not generate sufficient points to score well on part ii..

i. **Explain socially responsible investing and its role in the investment strategy for a South African retirement fund**. **[8]**

- These investments are not only focused on financial returns but also on generating positive social and environmental impact.
- There are various definitions of what constitutes SRI, but as a rule it seeks to encourage corporate behaviour that results in consumer protection, human rights and diversity.
- A narrow definition of SRI refers to practices that seek to avoid harm by screening companies included in an investment portfolio.
- Some SRI approaches seek to avoid businesses associated with or directly involved in alcohol, weapons, tobacco or gambling.
- Socially responsible investment in South Africa has been limited,
- while most market participants think responsible investment is important and has a material impact on how companies are valued, few financial institutions or advisers are doing much about promoting this kind of investment.
- The focus on SRI has increased in recent times but is largely dependent on the trustees, the investment consultants and the investment managers of the fund.
- There is a much stronger focus on responsible investment where returns are not sacrificed for social good,
    - but rather, given two possible investments each with similar financial returns, the investor should choose the one with the better ESG record.
- This is also captured in guidance and regulations:
    - PF130 says that funds must formulate an investment policy statement that includes “whether the fund has a socially-responsible investment (SRI) policy and its definition of such investment type”.
- Although PF130 implies that returns might be expected to be suboptimal
    - “The primary obligation of the board is to provide optimum returns for its beneficiaries. However, once these returns have been met, funds should consider socially responsible investments.”
- Regulation 28 includes:
- “A fund and its agents have a fiduciary duty to act in the best interest of those for whose assets they are responsible. This duty supports the adoption of a responsible investment approach to deploying capital into markets that will earn them adequate risk adjusted returns for the fund’s member profile, liquidity needs and liabilities. Prudent investing should give appropriate consideration to any factor which may materially affect the sustainable long term performance of their investments, including those of an environmental, social and governance character. This applies across all asset classes and should promote the vested interest of the fund in a stable and transparent environment.”
- As well as Principle (viii):
- “… before making an investment into and while invested in an asset consider any factor which may materially affect the sustainable long term performance of the investment, including those of an environmental, social and governance character.”

- For retirement funds, incorporating socially responsible investments into their portfolios can offer several benefits.
- Firstly, SRIs allow funds to align their investments with their personal values and ethical principles.
- This alignment can bring a sense of satisfaction and purpose, knowing that their money is supporting companies and initiatives that contribute to societal and environmental betterment
- There is potential for inclusion of projects that directly affect the members of the fund, housing, transport energy
    - there is growing evidence that socially responsible investments can perform competitively compared to traditional investments. Companies that prioritize ESG factors tend to have stronger governance, better risk management, and more sustainable business practices, which can lead to long-term financial stability and growth.
- For retirement fund investing, socially responsible investments can be integrated across the strategy. In the growth assets target companies with strong environmental and social records offering good growth returns and promoting positive change.
- In the other asset classes green or social bonds issued by governments or companies. These bonds fund projects that have specific environmental or social benefits, such as renewable energy, affordable housing, or clean water initiatives. They provide a predictable income stream while supporting sustainable development goals.
- Private equity projects are fairly common in the sustainability and renewable energy sectors

ii. Draft the points that you would make in response to the trustee. [13]

In order to consider the impact of the changes we need to consider (compare and contrast) the previous and current legislative environment and the impact this could have on the fund's liquidity strategy and as such to its investment strategy

- Under both the current and prior legislative environment the overall focus remains on ensuring appropriate benefits on retirement
- There should therefore still be a long-term focus for the investment strategy

Previous regime

- The main investment goal was to ensure sufficient savings at retirement, i.e. a long-term strategy
- On retirement members were able to access 1/3rd of the value of their savings as a cash lump sum
- Under the previous provident fund environment, members were able to access 100% of their benefits in cash
- and depending on the post-retirement benefit options (in fund out of fund etc), the investment strategy for a pension fund would need to take account of the expected liquidity requirements on retirement
- However, members were also able to access 100% of their benefits on exit before normal retirement age
- The Fund would therefore need to ensure that it was able to meet its overall liquidity requirements
- The investment strategy may have allowed for this through:
    - Using contribution inflows to meet outflows
    - Where the inflows were not sufficient there may have been:
    - a float in the bank account,
    - a portion of the assets allocated to a liquidity block,
    - a higher allocation to cash or short-term investments and/or

- a general strategy to ensure that an appropriately sized portion of the fund's investments were in liquid easily tradeable assets
- Each fund would manage its own investment strategy based on the past or expected experience of their arrangement

2 Pot environment

- The 2-pot environment is still in its early stages
- There will therefore still be 3 or 4 pots/components for many years
    - The vested rights of provident fund members prior to 2021
    - The vested component of vested rights to the previous benefit structure for all members benefits prior to 31 August 2024
    - A growing savings pot which was allocated an initial seed capital and
    - A growing retirement pot
- This means there is still a significant portion of members benefits that is not subject to the new legislative environment and for which there is likely to be no need for a change in investment strategy

- Into the future there will be a point in time where member benefits consist only of the 2 pots
    - A portion that can be accessible at all times, subject to legislative restrictions
    - and the retirement portion which cannot be accessed by members until retirement
- From a liquidity perspective you could therefore assume that the savings component should be in short term liquid assets
- while the retirement component which cannot be accessed could be invested in longer term, less liquid more volatile but higher yielding investments
- However, while members are not able to personally access the retirement component there is no guarantee that these assets have to remain in the Fund and could be transferred by the member to their new arrangement or some general savings vehicle like a RA
- The fund must therefore still have sufficient liquid assets to meet these needs
- So you have to balance the ability of members to access up to 1/3rd of their savings and while they cannot directly access the other 2/3rds the fund may be required to transfer those benefits presumably in cash to another fund.
- Overall, it is therefore likely that the liquidity requirements will potentially increase
- However, liquidity should not be confused with short term cash type investments
- Liquidity is available through almost all investment classes other than perhaps private equity and direct property ownership
- The funds liquidity strategy would therefore need to be considered but would make use of the same tools that were available before.

iii. Evaluate the advantages and disadvantages of this approach [6]

Advantages:

- The bank account would ensure there is sufficient liquidity for all savings component withdrawals and reduce the need to disinvest assets to pay claims
- It is likely that not all members will continually access their savings benefits and therefore the additional cash available could meet the other liquidity requirements of the fund, expenses, death, disability, resignation and retirement benefit payments, transfers to other funds
- For those members who continually access their savings component year after year the impact of investment returns on this portion is likely to be minimal and they are unlikely to notice the difference overall
- The fund's bank account is interest bearing so would earn a return although the rate is unknown

- There are unlikely to be additional cost for investing or disinvesting in the bank account while other investment strategies are likely to attract management and transaction costs
- The investment strategy would remain in place for the remaining assets and would save the board the time required to make adjustments to the targets and allocations

Disadvantages:

- The Fund is still a retirement fund and should remain focussed on long term investment returns
- Despite earning a rate of interest it is unlikely that the interest earned would compare to other short term investment instruments on a net return basis
- The proposed allocation is likely to exceed the typical allocation to short term investments and as such may impact the overall long-term returns earned by members
- This will have a significant impact on members who access their savings only as intended for emergencies or who retain these savings to retirement
    - 2-pot claim experience seems to indicate that most claimants were mid aged
    - The proposed strategy would have a significant impact on younger members who have a longer-term horizon and would want to take more risk and achieve higher returns
    - Older members approaching retirement may be less impacted