EXAMINERS' REPORT

June 2021 examinations

Subject F104 — *Retirement and Related Benefits*
Fellowship Principles

INTRODUCTION

The attached report has been prepared by the subject's Principal Examiner. General comments are provided on the performance of candidates on each question. The solutions provided are an indication of the points sought by the examiners and should not be taken as model solutions.

QUESTION 1

i)

- The process underlying the valuation of liabilities is fundamentally different between DC and DB funds;
- In DB funds there are multiple assumptions underlying the liability valuations
- Compared to a DC fund, where liabilities are generally equal to assets
- And fewer assumptions are applied.
- Analysis of surplus traditionally compares actual outcomes to expected (assumed) outcomes in a DB fund
- Whereas in a DC fund, the analysis follows a more pragmatic approach

ii)

- Investment returns earned compared to investment returns allocated
- Actual returns earned on investments can be compared to the total returns allocated to member balances, expense coverage, contingency reserves etc.
- Under allocated returns result in a surplus
- Actual expenses paid from the fund compared to contributions allocated towards expenses
- If the actual expenses paid from the fund are higher (lower) than the contributions allocated to expenses, a surplus (strain) will arise as a result.
- Differences between the timing that benefits arise compared to benefit payments being made
- This could result in differences between the level of assets disinvested for benefit payment compared to the benefit accrued
- Similar to unallocated and over-allocated investment returns above.
- Once-off items that have not been dealt with yet
- For example an ad-hoc settlement could add to the surplus arising
- if no decision is made to allocated the settlement to any fund stake holders then it becomes surplus in the fund.
- Changes in legislation
- May cause a change in the processes underlying the fund
- For example tax changes
- Which if not properly considered will lead to a surplus/deficit arising.
- Operational issues
- For example incorrect allocation of contributions compared to rates actually paid
- Will result in surplus or deficit arising.

Examiner comment: This question was reasonably well done. Candidates struggled to generate enough points for part (ii).

QUESTION 2

i.

- Adequacy
- Affordability
- Sustainability
- Robustness
- Minimise labour market distortions
- Contribute to investment to support economic growth

ii.

- An ageing population is characterised by lighter mortality, particularly for the elderly,
- and declining fertility.
- This means the number of pregnant women seeking medical care would reduce
- And the number of young children would reduce
- Which would have the effect of reducing benefit outgo for these groups
- However, the number of elderly would increase and
- Their total benefit outgo would increase
- The overall effect would depend on the relative change in the sizes of the three population groups.
- And the size of the average cost per person.
- Generally the elderly and very young children have the highest costs

iii.

- Under a PAYG model, the government effectively borrows from future generations to pay its benefits
- If the government uses the fund to fund infrastructure instead of using debt to do this,
- Economic growth will follow
- The size of the effect really depends on the size of the fund
- And what it is invested in
- Invested offshore– won't make a difference
- Similarly if saved locally as opposed to invested
- But then again, keeping money aside to create the fund means government cannot spend those
- And may use debt to finance other expenditure
- Resulting in a zero net gain

Examiner comments: Part i. was a bookwork question and was generally well done however it was clear that candidates were learning from summaries that may not capture the level of detail required. For example, candidates knew that there was a point related to labour market distortions but could not pinpoint that the system should aim to minimise them.

Part ii required some thinking through of the problem. Most candidates lost marks by speculating, for example saying the elderly must have the highest medical costs, instead of identifying the factors on which the overall costs of the benefits depended, for example, the relative average cost per person at different ages. Candidates also failed to note that the question specifically looked at the cost of the benefit and not the contributions collected.

Part iii was not well done and it was clear the candidates had not fully engaged with this part of the syllabus.

QUESTION 3

i)

- Redistribution
- Market Failure
- Efficiency
- Inertia
- External Pressure
- Moral Hazard and vested interests

ii) *The Entry Age Method:*

- Expressed as a percentage of earnings is
- The present value of all future benefits
- For a member joining at the assumed entry age
- By reference to projected final earnings
- Divided by the present value of the total projected earnings
- Throughout the member's expected membership

- The aim of the EAM is to produce a stable contribution rate from date of entry to date of retirement.
- And to still meet the EA savings target
- provided assumptions are borne out in practice.
- Which is useful if the government sets the tax with respect to some targeted income replacement goal,
- And wants to charge a predictable tax for citizens who join the work force at the assumed entry age.
- However, on introducing the tax, people closer to retirement age will end up not contributing enough,
- Since they have less time to save
- Although it is possible that older people will have some private savings at their disposal.
- The EASCR is a fixed rate which is too high in the early years

- and too low in the later years in terms of liability build-up,
- It may be politically more popular to charge a rate that starts low at younger ages and gradually increases over time.
- Younger members of society are more likely to have higher expense levels (debt, families etc)
- And will be more able to supplement retirement savings in later years after expenses have reduced somewhat.
- However higher rates at older ages may breach tax allowable maximums
- This structure is more in line with the PUSCR.
- In practice the EASCR should fluctuate to accommodate for a modified level depending on actual experience,
- Regular recalculation of the rate is unlikely to take place on a state benefit
- And people may end up saving too little or too much depending on actual outcomes.

Examiner comment: Both parts were reasonably well done. This was largely a bookwork question.

QUESTION 4

i.

- Estimate his future consumption stream
    - Permanent Income or Steady State consumption level
        - Themba is already able to retire so he can consider his current consumption level.
    - How are consumption patterns likely to change as he ages
        - For example, increased medical expenditure offset against decreased golf expenditure
    - Uncertainty in consumption streams
        - Can uncertain expenditure be smoothed via insurance
    - Themba's predicted retirement age,
    - expected life span and that of dependents
- Calculate an Expected Present Value

ii.

- Defaults
    - For example, could suggest a default of an inflation-linked life annuity at retirement
    - And a commutation % of 0% {max 1 for the example}
    - Can use auto-escalating contributions as a default
    - The problem with a default is that members can always choose differently
    - And financial advisors may have incentives to advise differently
    - May need to provide accompanying education.
- Incentives/Penalties
    - Encourage members to contribute more
    - e.g. through a matching system

    - But this can be expensive for the employer which may result in a low level of matching
    - Encourage members to retire later
    - E.g. by applying penalties on early withdrawal and using the surplus created to pay bonuses to people retiring later
    - This may be regarded as unfair as blue collar workers who need to retire earlier may land up subsidising executives.
    - Can perhaps negotiate discounted rates on life annuities for members
    - Or include a financial planning session on retirement where the broker is paid a fixed fee instead of commission.
    - However, members may already have their own broker who will be in a better position to advise on their full portfolio
    - With a drawdown account, members need advice on the ongoing investment, particularly as they age.
    - A fixed fee provides no incentive to the broker to do this
    - So members who choose a drawdown account are actually at increased risk of exhausting their funds.

iii.

- In Option A, Themba will choose what % to allocate to each asset class.
- There may be no guidance by the trustees.
- In a customised default (Option B), default allocations to each asset class are given
- based on objective factors,
- Such as salary, size of fund credit or period to retirement (max 1 for examples)
- In both systems, Themba has ultimate decision-making power
- So he can take into account personal information like:
    - His good health and active lifestyle
    - What decumulation option he will choose at retirement
    - Outside investments he may have
    - Expected retirement age
    - His risk aversion
- Themba is unlikely to have the expertise to take all of these factors into account
- But given that he is an executive, he may have access to a financial advisor to assist him.
- In the customised default solution (option B), Themba is given an anchor point.
- This could be a good default if Themba's characteristics are similar to those people on whom the default allocation is based
- However, it may be difficult for Themba to tell this unless the trustees make this clear in their communication.

- And even then it may be difficult for Themba to figure out how much to adjust the default/ Anchoring effect.

Examiner comment: In part i, some candidates focused too much on the consumption change at and in retirement as opposed to considering the question more broadly. Part ii was well done generally. In part iii, most candidates failed to identify that Option B was a default and Option A represented choice without a default.

QUESTION 5

i)

Advantages

- Employees may prefer to remain within the fund after retirement which boosts the employer's reputation.
- Economies of scale in the fund may be achieved by a growing pensioner pool which reduces expenses and associated risk to the employer.
- The arrangement may attract loyal staff, to the employer's benefit.
- The employer is taking some risk in the fund and so may be entitled to a proportionate share of surpluses that arise from the pensioner pool.
- There may be some tax advantages to showing a high level of paternalism to retiring employees.

Disadvantages

- The employer is taking on the longevity risk
- And investment risk of the pensioners
- Although to a small extent since the level of guarantee is low
- Liability related to the low level of guarantee will need to be reflected on the employer's balance sheet.
- The system may be administratively complex
- Which could end up costing more to the employer in terms of money and time for trustees.
- There might be some legislative restrictions involved in letting pensioners take on some of their own risk.

ii)

- The valuation reflected in the employer's balance sheet is the accounting valuation.
- And usually reflects the level of surplus only that can be accessed by the employer.
- The two valuations also apply different assumptions when valuing any defined benefit type of liabilities
- Like the in-fund pension liability.
- And any surplus in the in-fund annuity will mostly likely all or largely belong to the pensioners

- Since they are exposed to the major part of the investment and longevity risk

iii)

- The trustee is looking to see a higher surplus value in the employer’s financial statements
- Which would make the employer appear financially healthier overall
- And could impact incentives (such as bonuses) that employees may be entitled to.
- The trustee is conflicted to the extent that they would prefer to see a change in the method or assumptions in the valuation that would improve the level of surplus that can be reflected in the employer’s balance sheet.
- This may not be in the best interests of members and pensioners
- For example, if their benefit security is reduced.

iv)

- Following two different strategies in the two different asset pools will make most sense
- The trustees should consider the current investment strategy in place.
- And required adjustments after segregation
- The costs involved in segregating the pensioner and active member assets should be considered. There are immediate and ongoing costs to the suggested change that should be considered
- For example segregating assets would require the setting up of two separate portfolios (immediate cost)
- And there would be transactions across the portfolios when members retire (ongoing costs) which weren’t there before.
- The trustees would need to consider whether to keep the current investment managers
- Or whether to seek out investment managers that may be more appropriate after separating the active and pensioner portfolios.
- Any change in investment strategy may impact on the fund’s actuarial valuation
- In particular relating to the pensioner pool in this case
- The trustees should be clear on how the valuation result may change before making a decision.
- The trustees should consider administrative implications of any investment change
- And whether the current administrator has the know-how to manage the fund through the change
- And thereafter.
- For the active member assets the trustees should consider possibly being more aggressive in the investment strategy
- Since the current strategy is likely to be more conservative to protect pensioner interests.
- The trustees may want to set a target for income replacement at retirement
- And use stochastic or other modelling to determine an optimal strategy for the active members.
- For the pensioner assets the trustees should consider the ability and willingness of the sponsor to uphold their promise (even though it is small)

- And consider pension increases that pensioners may be expecting in the future.
- Any investments that mitigate longevity risk should be considered
- And it is likely that high levels of investment liquidity should be maintained
- Since contributions will flow into the active member pool.
- All legislative and tax implications should be considered.
- Surpluses will be easier to manage if kept in separate pools.

Examiner comments: Part (i) was reasonably well done. The candidates struggled with the higher order and applications questions. In general the knowledge of the difference between accounting and funding valuations is poor. Candidates do seem to have a good grasp of the conflicts of interest faced by employer trustees.

QUESTION 6

i)

- There is a large risk related to the time at which the investment returns are earned on fund assets
- Compared to when they are allocated to member balances.
- If actual returns turn out to be persistently lower than the monthly growth allocation
- Then members that exit within a financial year will receive too high an allocation of return.
- That also reflects the over allocation of returns made to exits
- While members still active at the financial year end will likely experience a negative bonus allocation
- Effectively creating a cross-subsidy from stayers to leavers, which is generally considered unfair. /i.e. the final bonus allocation will be even lower than the actual fund return to compensate for the additional return paid to exits.
- The alternative to having a negative bonus at the year end is for the fund to become underfunded.
- This is unlikely to be a viable option for a DC fund.
- Any deficit would have to be recovered from future investment returns
- That should really belong to active and joining members.
- If actual returns turn out to be persistently higher than the monthly growth allocation
- Exiting members will not receive the full return that is due to them.
- This is not equitable across members since exits will have shared completely in the investment risk until their exit date.
- Alternatively a surplus could be allowed to build up in the fund
- To be distributed to members that exited in years of high returns
- However this exercise will introduce additional costs and administration requirements.
- There is also the risk that final bonus calculations are incorrect
- Which leads to similar problems as described above.

ii)

The regulator can be expected to express the following concerns:

- <u>Product regulation</u>
- The fund's method of allocating return is not equitable to members
- And creates areas of cross subsidization,
- Particularly between different generations of members
- Which should (arguably) not occur in a defined contribution fund
- and perhaps does not comply with certain standards set by the regulator.
- <u>Market Conduct Regulation</u>
- The regulator will want to ensure that members are fully informed about the risks they are being exposed to
- And may seek more information regarding the fund's efforts to communicate with their members
- Regarding the implications that arise out of the method of allocating returns.
- <u>Prudential Regulation</u>
- The regulator may express concern over the future solvency of the fund
- Particularly over periods of poor investment returns
- When timing mismatches could push the fund into a deficit
- That will only be noticed at a financial year end (which may be too late).

iii)

- The valuation report can identify the risks and make formal recommendations to mitigate them.
- Valuations can be done more regularly (for example quarterly or monthly)
- To ensure that returns are being more frequently distributed to members
- However there will be a time lag between the end of the period and the valuation
- Which means intergenerational transfers are still not eliminated
- This may increase the costs of running the fund.
- The valuation could incorporate a contingency reserve
- That is earmarked to smooth returns over time.
- A reserve will protect members from significant fluctuations in their retirement savings balances
- And will protect the fund's solvency.
- Members should receive a proportional share of this reserve at exit to ensure fairness across members.
- The valuation can be used to identify more specifically the causes of volatility in the fund (for example an inconsistent investment manager)
- And the trustees can take action on that basis.

Examiner comments: It was clear that the candidates were running out of time for this question. Only half the group attempted to answer and those that did answer did not do well. Candidates do not seem to understand the importance of an actuarial valuation in a defined contribution fund.

QUESTION 7

i.

- A type of life insurance arrangement where a group of members
- Who may be defined as a group of people who are members of the same retirement fund
- Are provided with cover for risk events such as death or disability in exchange for a premium
- Based on the characteristics of the full group.

ii.

- If BigCo moves to self-insurance, they will be promising a defined benefit which will be funded by regular contributions.
- This is likely to create a capital strain within the fund
- It is possible that the fund has surplus in it
- But one would need to consider carefully the source of the surplus
- Particularly as all the staff need the disability cover and not all may have been members of the fund previously.
- The most likely scenario is that BigCo would need to provide this capital.

- Security
  - Benefit security may be better for members through the GLI arrangement
  - As life insurers may be required to have margins for prudence that pension funds are not
  - Although this really does depend on the credit rating of InsureCo relative to BigCo
  - Poorer benefit security may create reputational problems for BigCo

- Stability
  - If BigCo is 100% experience rated then in both cases the stability of the risk premium will be influenced by their claims experience alone.
  - If not, then the premium will be far more stable with InsureCo due to the much larger risk pool at the insurer.
  - The other margins that form part of the InsureCo premium will be influenced by the insurance cycle.
  - Which may result in some instability over time

- Sustainability
  - In both cases, the contribution is going to reflect the underlying demographics of the risk pool and are probably equally sustainable

- Realism
  - The self-insured option is likely to give a more realistic estimate of the cost of the disability benefits as it is unaffected by the insurance cycle.

- Accounting
    - The DB benefit within the DC fund is likely to render this is now a hybrid fund
    - Which may result BigCo having a liability reflected in their own accounts
    - This may create additional costs for BigCo

- Liquidity
    - Coming up with the initial capital may create liquidity problems for BigCo
    - Paying disability benefits could also create liquidity benefits for the fund although this is mitigated to the extent that these are income and not lump sum benefits

- Flexibility
    - The scheme would need to estimate its own premium. This could be a more flexible arrangement than commercially available terms

- Opportunity Cost
    - BigCo needs to consider whether the capital required to move to self-insurance could not be better used elsewhere.

- There may be differences in taxation for both BigCo
- And employees
- And regulation permitting the risk financing
- And use of any surplus within the fund

iii.

Concerns

- The insurer is going to have a profit margin priced into the premium
- And if the insurance cycle is hardening this could be high
- <u>A typical way to deal with this problem is to rebroke the cover annually to see if another insurer can provide a better deal.</u>
- <u>Alternatively, could create a profit share arrangement with InsureCo</u>
- <u>This is usually simpler than partial reinsurance which is also an option.</u>
- It is also possible that the risk premium at InsureCo does not reflect the true risk
- This may occur if BigCo's premium is in part based on book rates as opposed to purely on their own experience.
- However, BigCo is said to provide this cover to its very large staff complement
- So likely to be 100% experience rated which means its excellent safety record is fully taken into account.
- The safety record itself may not have a large effect on the premium as it depends on the mix of disability claims between accidents on-duty, accidents off-duty and illness.
- Could do an experience analysis to understand this better.

Problems with proposed solution

- Claims assessment and management requires specialist skills
- How will the self-insurance arrangement acquire these?
- And due to lack of scale, this may be more expensive than going through an insurer
- Similarly, availability of inhouse expertise to price the premium and calculate the reserves a concern
- From a reputational point of view it is usually easier to have someone separate from the employer or fund assessing the claim
- All staff are covered for disability but retirement funds typically have eligibility criteria
- May be negative implications to adding new fund members e.g. higher admin costs
- May be under pressure to expand retirement savings components to more workers which could have cost implications
- May use the insurer for other risk cover and removing the disability cover could harm the relationship.
- Disability cover is highly cyclical and claims are highest in a down-turn
- It is important to consider what part of the economic cycle past claims experience reflects

Alternative solutions in addition to those given above

- It's possible that the COO's comment means that the disability cover is too expensive.
- There are ways to reduce the absolute level of cost while leaving the risk with the reinsurer:
    - Reduce the replacement ratio
    - Increase the deferred period
    - Use a stricter definition of occupational disability
    - Limit increases to the disability benefit
    - Cap the number of payments

Examiner comment: Part i was surprisingly poorly answered with many candidates writing what they know about group life assurance as opposed to defining group life insurance. All candidates missed that because of BigCo's size, the disability scheme was likely to be fully or largely experience rated. This made part ii more difficult and also impacted part iii.