Institute of Actuaries of India

Subject SA4 – Pensions and Other Benefits

November 2023 Examination

INDICATIVE SOLUTION

Introduction

The indicative solution has been written by the Examiners with the aim of helping candidates. The solutions given are only indicative. It is realized that there could be other points as valid answers and examiner have given credit for any alternative approach or interpretation which they consider to be reasonable.

Solution 1:

i) The Objective of introducing the pension scheme by the Country to its citizens are

- ✓ Establish a social security net to its citizens so that they have a regular income during old age
- ✓ Access to this "net" especially to the weaker sections of the society at an affordable cost
- ✓ Would like to keep the cost of providing the benefits viz budgetary provisions at minimum
- ✓ Wider coverage across different sections of the society, fairness across generation, simple to administer are the other objectives of the Government while launching.

To what extend the objectives are met?

- ✓ The scheme provides regular income at old age to the individual & to their family. But the senior citizens are still exposed to other risks eg morbidity, disability
- ✓ Provides assured income during old age. But this benefit is likely to eroded due to inflation & may prove to be inadequate especially when the longevity of its citizens increases
- ✓ Scheme is co-financed by the individual. The contribution rates are highly subsidized. Every citizen who satisfy the eligibility criteria can join the scheme. The Government objectives in terms of cost, affordability to the less privileged, fairness will be met by the design. But it is not targeting the needy. Some sections of the society (eg: existing senior citizens who are above age 60, those who cannot afford even the subsidized contributions rates) are excluded from the coverage
- ✓ The scheme is optional; it provides scope for withdrawal from the scheme before age 60. Due to this feature, the objective of providing regular income at old age may be adversely impacted.
- ✓ Individual account keeping, management of funds, annuity purchases will likely to incur significant expenses which may indirectly impact the cost.

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ii)

- ✓ The cost of guarantee is the difference between the corpus estimated based on either deterministic or stochastic scenarios of interest and the estimated corpus required at age 60 based on prevailing annuity rates.
- ✓ The contribution will be accumulated based on a deterministic set of interest rates till age 60. This deterministic set of interest rate can be a single interest rate for remaining term, range of interest rates depending on the current market scenario or average of range of pessimistic and optimistic range of interest rates.
- ✓ Otherwise, the interest rates can be estimated using stochastic modelling with Economic Scenarios Generators.
- ✓ The Stochastic Modelling will give us a distribution of interest rates and outcomes and we may choose a distribution/outcome which is giving us a required level of confidence.
- ✓ The required corpus will be estimated based on the prevailing annuity rates or the prevailing annuity rates can be adjusted to reflect the future changes. Mortality and attrition rates can also be used while estimating the cost of guarantees as these factors are significantly affecting the cost.
- ✓ The cost can be estimated for each member and the aggregate cost will be sum of all individual cost.

- ✓ Or the cost can be estimated for each age as model points and the results can be scaled up to arrive at the aggregate cost.
- ✓ This can be estimated as an Open Scheme wherein new members are included in future and as a Closed Scheme wherein no new members will be added.
- ✓ For open scheme, an assumption about number of new members and age profiles are required for estimation. For closed scheme, the profile of the existing members will be used.

Estimation of Cost at inception:

- ✓ At inception, the major factors affecting the cost of guarantee is the membership profile
- ✓ As these factors are unknown and uncertain, we may have to assume these and calculate the cost of guarantee. Assumptions about the future annuity rates, mortality and attrition rates may also be required for the calculation.
- ✓ The cost can be estimated either on deterministic basis or stochastic basis.

Estimation of cost after implementation:

- ✓ After implementation, the membership profile will be known with certainty. The Scheme will be maturing over a period of time & the age profile of the scheme will be stable.
- ✓ There will be reliable trends on the investment returns based on the performance of the assets
- ✓ Actuarial valuation of the scheme using the parameters taking into consideration the scheme experience & based on actual membership profile will give reliable estimate of the cost of guarantee.

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iii) Terminal Funding

- ✓ Under this method, the individual cost for each eligible member can be calculated as the difference between the actual accumulated contribution and the actual purchase price required to pay the pension.
- ✓ The total cost per year will be the sum total of individual cost of all the members who become eligible to receive pension in the respective year.
- ✓ As the scheme is purchasing annuities, the cost of guarantee has to be funded at the time of purchasing the annuities.
- ✓ This method will introduce fluctuation in the cash flow to the Government as the cost per year is significantly depending upon the number of eligible members in the respective year and their respective individual costs.
- ✓ This may not be a problem to the Government if the funding requirement is not significant compared to the total revenue of the Government.

Initial funding when a member joining the scheme:

- ✓ The cost of guarantee will be calculated whenever a member is joining the scheme and the cost will be funded as a one-time lump sum payment.
- ✓ This will be simple to administer. However, when the member pre-maturely leaves the scheme, the lump sum paid by the Government has to be returned and this will make the administration complex if the lump sum is paid to member’s account.
- ✓ There will be additional issues related to Opportunity cost as the contribution may be invested/spend elsewhere by the Government instead of making a lump sum contribution at inception of member.
- ✓ Large turnout of members joining or leaving the scheme introduce fluctuations in the cashflow to the Government.
- ✓ The interest earned on this lump-sum will also create additional issues such as lower interest earnings will lead to inadequate purchase price and require more funding at later stage and therefore, periodical experience analysis and monitoring is required.

- ✓ If the lump-sum earns higher interest earnings, dispute may arise about sharing of surplus as the scheme provides higher pension if the accumulated corpus is more than sufficient to pay the guaranteed pension.
- ✓ Due to the above reasons, Government is unlikely to use this option

Regular funding during vesting period:

- ✓ The cost of guarantee can be contributed through regular contributions over the vesting period for each member.
- ✓ The experience will be monitored periodically through actuarial valuation and based on the experience the future contribution will be set. The contribution may be paid to each member's account or a separate fund can be created to handle this additional government contributions.
- ✓ If a separate fund is established to meet the guarantee, there is scope for flexibility for funding the guarantee.
- ✓ The regular monitoring and uncertain future contribution will increase the complexities in the administration.
- ✓ At the same time, this regular monitoring helps the government to assess the financial viability of the scheme at regular intervals and appropriate change in pace of funding can be done by the government.

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iv)

- ✓ The pension scheme is a hybrid scheme- it provides defined benefit with individual funding. The investment strategy should be consistent with the special characteristic of the benefit provided.
- ✓ The strategy should aim to enhance the returns subject to meeting the assured guaranteed benefit at age 60 keeping the cost to the Government at minimum.
- ✓ The scheme also provides withdrawal benefits before age 60. Hence liquidity of assets will also have to be considered while deciding the strategy.
- ✓ The scheme is individually funded & therefore the investment strategy should be similar to that of a defined contribution scheme.
- ✓ Due to the guaranteed pension benefit, the contributions of the Government are to be invested to ensure the adequacy of the corpus to purchase the guaranteed pension from the insurance companies.
- ✓ The investment strategy should be reviewed periodically and dynamic enough to handle the risks.

Strategy for Member contribution:

- ✓ The members contributions have to be invested to match the liabilities which is a lump-sum required to purchase annuity at age 60. The term of investments range is from 20 to 42 years and this term is sufficiently long.
- ✓ While the reward of good return will go the member in the form of higher pension benefits and any shortfall in return will be funded by government. Thus, the potential benefits of higher investment risk is passed on to the subscriber & any cost of downside risk is met by the Government funding.
- ✓ The Government may formulate several (three or four) investment strategies with different levels of risk (& return) and the members may be given choice in selecting an investment strategy.
- ✓ Since the scheme is open to all citizens, financially literate citizens will prefer such options as they get the full benefit of higher investment returns (without the downside risk).
- ✓ But providing investment option to the less literate citizens may lead to inappropriate risks being taken, thereby increasing subsidy to the Government. Further providing such options (the switch from one strategy to the other) may increase the administrative complexities there by increasing the investment related expenses.

- ✓ Alternatively, a default investment option can be set for the scheme. This option will aim to maximize the investment returns in the initial years & gradually move towards to match the pension purchase as the member approaches age 60. There may be a higher equity content in the initial years (eg equity 80%; bonds 20%) which will reduce gradually over the period of time (eg equity 5% to 95%bonds).
- ✓ In either strategy the assets should be standard assets & the risks should be diversified across all categories.
- ✓ For example, the investment in equities should be related to "listed equities" & the investment in any listed equities should not exceed 5%. Similarly, Government approved Bonds or highly rated corporate bonds are only permitted in bond category. Investment in high risk assets such as property and private equities are to be prohibited for the scheme.
- ✓ Some funds are to be backed by "short term liquid assets" to provide withdrawal benefits & to purchase annuities at age 60.
- ✓ If the Government intends to outsource the investment of funds, investment expenses will also have to be considered. As Government is responsible for providing the benefits, a proper Governing & reporting mechanism must be established to monitor the investment activities.

Strategy for Government contribution:

- ✓ The Government is providing the funds to meet shortfall in case the accumulated contributions is not sufficient to purchase the assured pension benefit from the insurers. This depends upon the schedule of contributions prescribed for the scheme, age profile of the members, investment performance of the members contributions, trend in the annuity market prices & the Government's approach to the gap funding.
- ✓ Highly subsidized contributions rates, large level of subscribers, poor investment performance of the members fund & high annuity purchase price will increase the burden to the Government & require higher funding.
- ✓ If the Government chooses to fund the gap regularly there is a need to have a proper investment strategy. All the risks relating the investment is met by the Government. A higher risk (& higher return) strategy is suitable for Government funds.
- ✓ The objective will be to maximize the return subject to meeting the gap funding as and when its rises thereby limiting the Government subsidy to minimum. There is also a need to match the performance of assets with the movement of (likely deficit) regularly to ensure that the cost does not exceed the budgetary provisions.
- ✓ If the cost of guarantee is likely to be small & the Government decides to adopt a terminal funding approach, no investment strategy is required for government contribution as the contributions are made at the last moment.

[10]

v) Merits & demerits of establishing PPF fund:

- ✓ Annuities are expensive to buy as it will have margins for the profit & expenses of the insurer.
- ✓ When annuities are purchased, the risks relating to investment, longevity are passed on to the insurer. But in case of default by the insurance companies, the Government is still responsible for providing the assured pension to its citizens. Hence the risks to the Government is not removed entirely while buying annuities.
- ✓ Annuities prices are market related & they are likely to vary across generations. It is very difficult to communicate the differences in annuity amount (for a given pension corpus) to the subscribers.
- ✓ When buying annuity, there will be transfer of funds to the insurance companies & the security of these funds will be left to the market conditions to which annuity providers are exposed.
- ✓ Any benefits relating to the longevity/mortality of pensioners are passed on the insurance companies.

- ✓ Establishing a PPF fund & payment of pension from this fund addresses the shortcomings of the annuity purchases.
- ✓ PPF provides more flexibility to the Government to fund the cost of guarantee. For instance, the Government may have option to defer the gap funding even after the vesting age of 60 as it has retained control over the funds.
- ✓ The fund will be retaining the benefits of favourable investment/mortality/longevity experiences of the group.
- ✓ However, the PPF has the following disadvantages:
- ✓ 1) A mechanism is to be established for managing PPF fund & delivering pensions. There will be expenses relating to this fund which have to be met by Government.
- ✓ 2) Under the annuity purchases, there was scope for subscribers to get higher pension benefits if the corpus is more than sufficient to buy guaranteed pension. It is not possible to provide such higher pension for subscribers.

In case the Government decides to establish the PPF fund, it has to consider the following aspects.

Funding (the guarantee gap) strategy: The Government can still adopt the several funding strategies as stated in question ii. But after the establishment of PPF, it has an additional option of funding it even after the benefit has vested in member. This additional option helps the Government to smooth the cost in its budgetary provisions.

Investment Management: A mechanism is to be established for managing PPF funds. The government may use the existing investment structure (for managing members contribution) for this purpose. It will have the benefit of saving of investment expenses & avoid transfer of funds at the time of vesting.

However, a different investment strategy is to be adopted to match the guaranteed pension benefits which are now being paid out of the pooled PPF fund. The compositions of assets will also undergo a significant change (primarily dominated by secured assets) to match the assured benefits.

In case the Government decides to outsource the investment, a proper mechanism is to be established for monitoring & reporting. Any such strategy should be consistent with the strategy for managing existing funds.

Actuarial Investigation: A regular actuarial investigation (preferably on year to year basis) is to be conducted to ensure the adequacy of funding to provide the assured pension. A proper mechanism should be in place to collect the members data with quality. Systems must be in place to gather the past experiences relating to the scheme so that reliable parameters can be used in the investigations. There is a need to appoint a scheme actuary for this professional work.

Surplus/Shortages- how to address?: The results of the actuarial investigation may show some surplus or deficit. In case of deficit, the Government may decide to fund the deficit immediately or over a period of time. A funding objective approved by finance ministry will help in taking a decision over funding.

But in case of surplus, dispute may arise over ownership of surplus. Members expect that the surplus to be used to provide higher benefits (they were having the scope for higher benefits in annuity purchases). But providing higher benefits to all pensioners (or selected category) increases the cost to the Government. It also denies the opportunity to the Government to use the surplus for its gap funding.

Administrative mechanism: Administrative mechanism must be in place to deliver pensioner in time. It should have all the members data (error free) for ensuring prompt payment & for maintaining payment history for further work. The system should be capable of collecting & processing several information like collecting existence certificate, death of

pensioners/family pensioners & payment of purchase price. Frauds, incorrect pension pay outs will be significant operational risks for such a huge fund as they impact adversely the popularity of the Government & invite adverse court rulings.

Alternatives: The Government may also consider systematic withdrawal option (SWP) as an alternative to both the options. The Government under this option may permit the member to withdraw an amount of assured pension from the fund every month. The members may be given option to choose the pension age (even after 60). SWP has the advantages of both annuity option & PPF. Individual accounts are to be maintained even after age 60. There is a risk that the member survives even after the depletion of funds in his account. In such cases the Government is exposed to provide assured pension for the remainder of his life & also return the corpus after the death of family pensioners. This may significantly increase budgetary provisions of government at later years of the scheme.

[12]

vi) The disclosures should help the credit rating agencies to assess the cost of guarantee to the Government relating to the scheme & its impact on budgetary provisions. This will help them in assessing the risk to the lending agencies such as IMF to the country & to rate the bonds & other borrowing instruments of the government.

The following disclosures about the Pension Scheme can be provided in the disclosure report:

1. Key characteristics of pension scheme- benefits provided, contribution schedule, eligibility criteria etc
2. Membership profile of the scheme & how it changed over the last year
3. Results of actuarial investigation -key results recommended contributions, method, parameters used to measure guarantee, results of sensitivity tests conducted, how the surplus/deficit has moved over the last year
4. Investment objective & the changes if any- details/schedule of assets invested-investment performance of the assets & the changes in the ratings -details of NPA
5. Details of self-investment eg investment in bonds issued by Government
6. Contribution of Government over the last years & its percentage to budget
7. Policy of Government in financing of the scheme & the changes
8. Financial statements relating to the scheme duly audited & certified
9. Details of third_ party administrators relating to the scheme - for eg annuity provider, fund manager providing investment service, record keeping agencies
10. Significant risks to the pension scheme as observed (eg frauds, pending court disputes, , credit risk, market risk etc)
11. Key management personnel relating to the scheme

[5]

[50 Marks]

Solution 2:

i)

1. employees may value guarantee associated the defined benefit above the uncertain benefits under a DC plan.
2. The management may be confident that they can offer the benefits and administer the scheme within reasonable costs.
3. Management may have lost senior employees to competitors and may be keen to retain such long serving employees.
4. The DB plan may be the selling point to attract external talent.
5. The company may be operating in sectors wherein the competing companies have a DB plan.
6. There may be cases where the companies switched to DC plan and such migration was not received positively by the workforce.

7. Some survey or study may have indicated that employees inadequately provide for post-retirement income. Company may be helping the employees plan their retirement with a reasonable pension.
8. There may be another DB scheme with a surplus that the management is keen on using.
9. The annuity rates may be low currently thus influencing the decision.
10. There may be certain taxation benefits available to the company for a DB plan.
11. Depending on the salary composition, basic salary may not be a major component of salary and hence 50% of basic may not be a huge pension outgo for the company.
12. The eligibility criteria for this pension is 25 years. The number of employees satisfying this criteria may likely to be small & hence the cost may seem to be affordable.
13. Company may be operating in hazardous environment that adversely impact life expectancy of a person. Pension may be one of the ways to compensate the employee for long service to the company.

[6]

ii) Evaluation of past service obligation and determination of contribution rate are two separate computations and should be done on a mutually consistent basis. Eg. If accounting obligation is to be determined then the corresponding contribution rate will vary year on year under the projected unit credit method ; on the other hand if company desires a stable contribution rate for the given pool, the method of valuation will need to be changed to attained age or entry age method.

The actuary needs to refer to the pension plan document along with any amendments to the same, trust deed if executed, any other past practice that leads to constructive obligation.

There needs to be clarity on whether company will purchase annuities to secure the pension out-flows or the trust will make the payments to members as and when they are due.

Employee-wise data pertaining to basic salary as on the valuation date, date of birth, date of joining to the company, whether spouse is surviving.

The valuation will involve use of long-term assumptions. These assumptions should be mutually consistent and indicative of future expectations for the underlying employee demographics.

a. Discount rate – this may be taken as yield on assets if the valuation is purely for funding purposes or it must be taken based on yields on government bonds as required under accounting standards if the valuation is for accounting purposes.
b. Salary escalation – this needs to be based on management's expectation of future increases in the salaries of employees. The company may set different assumptions for demographically different employee groups.
c. Pension growth rate – this is already defined in the scheme as 3%.
d. Withdrawal rates - the value of this assumption will depend on the level of prudence intended by the management. Higher withdrawal rates will result in lower obligation (and required contribution rates) whereas, lower than actual attrition rates will result in prudent obligation with higher contribution rates thus portraying the scheme as costly.
e. Early retirement rates – the direction of impact of this decrement will be similar to withdrawal rates so long as the assumed salary growth is higher than 5%.

f. In service mortality – may be taken from standard mortality tables. The scheme does not have a big enough population or history to adjust the standard table based on own experience. Adjustments may be made in case there are some mortality studies that are relevant to the population.

g. Post-retirement mortality – this assumption is required if the company intends to pay the benefits out of the trust assets.

h. Annuity rates – this assumption will be needed in case company has decided to purchase the annuities. It may be possible that annuities available in the market may not exactly match the pension cashflows. Care must be taken to adequately adjust the available annuity rates so that the assumed annuity rates represent the benefits offered by the company.

Benefit cashflows has to be projected for each member upto normal retirement age using the above parameters & must be discounted to the present time to get the past service obligation of the member. The sum total of the obligation across all members will give the liability figures for the accrued benefits.

Contribution requirements may be derived in a similar way for the next one or more years or over the entire future service period using PU method depending on company's requirements. This will have to be modified depending on the funding strategy adopted to fund the past service liability.

For instance if the company decides to fund only 80% of the past service liability, the recommended contribution rate should allow for funding the deficit over the future service period of the employee.

Illustration are to be provided to the management for several combination of past service funding level & the contribution requirements. An allowance should be given for expenses of managing the scheme if it is significant.

Illustrations will also have to be provided for several set parameters to understand the significance of the cost & its variability.

[Max 8]

iii) The items of reconciliation of obligation under AS-15 are : Opening PVO, Interest cost, current service cost, past service cost, actuarial gains/losses due to change in financial assumptions, actuarial gains/losses due to change in demographic assumptions, actuarial gains/losses due to experience, actuarial gains/losses due to curtailment/settlement, benefit outgo and closing PVO.

- Opening PVO given as INR 520 crore
- interest cost computed on opening PVO based on discount rate at start of the year (expected outgo not given in data hence not assumed) = 7% x INR 520 crore = INR 36.4 crore
- Service cost computed as PUSCR times the pensionable salary = INR 7.5 crore x 12 x 7.5% = INR 6.75 crore. Assumption: the accrual rate, salary, service profile of members are appropriately reflected in the PUSCR rate
- Past service cost = NIL as there are no changes in the plan features.
- Impact of change in discount rate = ((1.07/1.075)^14 - 1) x INR 520 crore = INR (32.86) crore (gain)-14 being the assumed term of obligation.

- Impact of change in salary growth rate = ((1.0625/1.06)^12 - 1) x INR 520 crore = INR 14.90 crore (loss)-12 being the assumed term till which salary growth impacts the obligation.
- Experience loss due to higher-than-expected salary increase = ((1.075/1.06) - 1) x INR 520 crore = INR 7.36 crore (loss)
- Experience gain due to exits with no eligible benefit 500/2500 * INR 520 crore = INR (104) crore (gain): It is assumed that the service of employees who exited are less than the eligibility service.It is assumed that the employees exiting the company were not of significantly different demographics as the other employees. Also assumed that there was no attrition assumed in the valuation as on 31-Mar-23
- Benefit outgo = INR (0.4) crore
- Total projected closing PVO = 520 + 36.4 + 6.75 – 32.86 + 14.90 + 7.36 – 104 - 0.4 = INR 448.15 crore
- Allowance needs to be made for 700 new employees but the value cannot be estimated in absence of salaries of these employees.

Summary

Opening PVO	520
Interest cost	36.4
current service cost	6.75
past service cost	0
actuarial gains/losses due to change in financial assumptions	(– 32.86 + 14.90) = -17.96
actuarial gains/losses due to change in demographic assumptions	0
actuarial gains/losses due to experience	7.36 – 104 = -96.64
Actuarial gains/losses due to curtailment/settlement	0
benefit outgo	-0.4
closing PVO	448.15

[Max 12]

iv) Possible sources of deficit and options to improve funding level:

The company may not have adhered to the contributions recommended by the actuary. The trustees may require the company to agree to a contribution plan linked to company's profitability or cashflows so that the trust recovers the funds when the business is growing at the same time company is not strained during the downturn.

There may have been changes in the statue requiring restructuring of the salaries thus requiring the company to fix a much higher basic salary for the employees.(eg introduction of new labour code). The company may reduce the pension as multiple of basic salary to match the benefit level before such restructuring.

The profile of retiring employees may have contributed to the growing deficit if they are significant in number. For eg high profile employees attaining superannuation age. For them, full expensive pension will have to be purchased with Insurance companies at market rates. This will aggravate further the poor funding level.

There may have been M&A activity wherein group of employees were inducted in the plan without corresponding assets transferred to the trust. Due to this the profile of members will be maturing more quickly than the company would have anticipated. Trustees may require the management to transfer adequate assets and also to seek

their advice during any M&A activity to ensure pension liabilities is not growing excessively.

Poor investment performance may be another source of deficit. But this is unlikely to be the primary cause due to the poor funding level. But there may have been defaults on some of the securities held by the trust thus requiring impairment in the assets. Company will need to make an additional contribution to make good the deficit.

Changes in the method of valuation or changes in the valuation not consistent with market driven asset value- for eg there may have been significant reduction in the discount rate over the period. The value of assets would not increase to same extent as the scheme is severely under-funded.
Company may check the consistency of other assumptions like salary growth rate considering reduced yields. Maybe there is a case for reduction in salary growth rate.

There may have been data error that was rectified eg. Class of employees missed in earlier valuations is now included or salaries not captured accurately in earlier valuation are now rectified etc.

Merits of using insurance products to reduce the deficit:

1. Range of Insurance products available for cash accumulation phase and for benefit payout phase.
2. Insurance companies, due to the competition, offer high investment returns to the fund invested. This will help to reduce the funding deficit
3. Significant portion of the investment products will be invested in equities & other real return assets. Insurance companies will also be actively managing their portfolio taking into market conditions.
4. The company/trustees need not invest resources in investing activities as the insurer's fund manager will do it on behalf of the trustees.
5. There is a lower counter party risk as the insurers are subjected to strict capital adequacy and solvency norms set by regulator.
6. Company can significantly or completely transfer the longevity risk to insurer if a matching product is sold by an insurer.

Demerits of using insurance products to reduce the deficit:

1. The insurance products will have margins for insurer's expenses, commissions and profits. This makes insurance products costly compared to self-management over the long term.
2. Buying annuity especially when the fund is in significant deficit, will further increase the deficit. While the retiring members are secured in full by such annuity purchases, the accrued pension of in service members will be exposed to higher deficits. The problem will aggravate as more & more members join the pensioner's category.
3. Insurer may not have a product that completely replicates the scheme benefits. Hence the company may need to keep purchasing additional annuities at future date. it may become administratively challenging to keep track of different contracts purchased at various points in time.
4. The company does not have any control over the investment of assets. The contracts held may not reflect the company's or trustees risk appetite.
5. Certain contracts for cash accumulation may not have a mark-to-market exposure thus exposing company's balance sheet to volatility due to interest rate movements.

6. Determining 'fair value of plan assets' may become challenging as there is no secondary market for annuities. The value of scheme deficit/surplus will then depend on the approach used by the actuary to value the annuities.

[Max 12]

v) Possible options to de-risk:

Management needs to first identify the main objective behind launching the scheme and whether the same is till relevant on the current date taking into consideration the market conditions in which the company is operating & the impact on profitability due to this pension scheme.

It has to examine the impact of the pension scheme cost on its management expenses & the changes in liability due to the introduction of the pension scheme

If it is found that the pension scheme is severely impacting its financial performance, it may be necessary to de-risk the pension scheme. But any such measure should not adversely impact the benefits already accrued.

The company may choose to close the scheme to new entrants –

- Company may have to compensate the new employees in other form (additional salaries or other DC plans etc)
- Adjustments need to be made to the contribution rates as the management of closed scheme will be based on different principles than the management of an open scheme.

The company may choose to close discontinue the accrual of benefit immediately –

- Company may have to compensate the current and new employees in other form (additional salaries or other DC plans etc)
- Company will need to clearly communicate to each employee their eligible pension amount should they reach the retirement age.
- Company needs to decide whether the link to final salary will be maintained. Or any other methodology of determining pensionable salary at the time of retirement.
- The deficit of the scheme will be crystallized, and a concrete contribution plan can be set up.

The company may choose to implement above options while simultaneously launching a DC scheme –

- Determining a suitable contribution rate may become challenging.
- The members may have some confusion regarding their retirement benefit if they are enrolled under 2 schemes (DB and DC)
- Company will need to invest resources in management and compliance of two schemes.
- There will be certainty in the future pension costs.

Company may choose to limit the maximum pension amount.

- The extent of improvement in the funding level would depend on the generosity of the maximum pension. Lower the ceiling place, higher the chance that the ceiling will be hit and greater the reduction in obligation from the current levels.
- Company needs to decide on the approach towards members already drawing a benefit higher than the set ceiling.

Company may choose to limit the maximum pensionable salary amount.

- This will only impact the active employees (future retirees).

- Company needs to decide on the approach towards members already drawing a pensionable salary higher than the set ceiling.
- The limit on salary controls the pension amount at the initial years while the limit on pension amounts controls costs later in retirement. Company needs to evaluate the impact considering the demographics of the scheme and timing and value of reduction expected due to each decision.

Company can require the employees to contribute towards the scheme.

- This will require the trustees to set policies on distribution of surplus in event such surplus arises.
- If the company reduces or removes the contribution requirement, the employees may demand refund of past contributions. Determination of such amounts may prove to be challenging.

Company can encourage members to take higher transfer value for the benefits vested or provide option to retire higher retirement age(without further benefit accrual). But the impact depends upon the number of members exercising the option.

Company can purchase annuities to secure the benefits.

- The amount of surplus released will depend on strength of basis used for valuation. If the cost of annuity is lower than the actuarial reserves, the scheme may see a improvement in surplus position.
- Purchase of annuities may enable the trustees to make slightly higher allocation to riskier assets thus improving the position over a long term as risker assets would normally result in higher returns.

It is necessary to communicate the decision taken to the members in a transparent manner so that the importance of the need to de risk the scheme is well understood by the members.

[Max 12]

[50 Marks]

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