RET DAU Model Solutions
Fall 2021

1.

Learning Objectives:

1. The candidate will be able to analyze different types of registered/qualified retirement plans and retiree health plans.

4. The candidate will be able to evaluate plan design risks faced by sponsors of retirement plans and retiree health plans.

5. The candidate will be able to evaluate sponsor's goals for the retirement plan, evaluate alternative plan types and features, and recommend a plan design appropriate for the sponsor's goals.

Learning Outcomes:

Given a plan type, explain the relevance, risks and range of plan features including the following:

(a) Plan eligibility requirements
(b) Benefit eligibility requirements, accrual, vesting
(c) Benefit/contribution formula, including the methods of integration with government-provided benefits
(d) Payment options and associated adjustments to the amount of benefit
(e) Ancillary benefits
(f) Benefit subsidies and their value, vest or non-vested
(g) Participant investment options
(h) Required and optional employee contributions
(i) Phased retirement and DROP plans
(j) Risk-sharing provisions

(4a) Identify how plan features, temporary or permanent, can adversely affect the plans sponsor.

(4b) Assess the risk from options offered, including:
(i) Phased retirement
(ii) Postponed retirement
(iii) Early Retirement
(iv) Option factors
(v) Embedded options
(vi) Portability options

(4c) Recommend ways to mitigate the risks identified with a particular plan feature

1. Continued

(4d) Analyze the issues related to plan provisions that cannot be removed.

(5a) Describe ways to identify and prioritize the sponsor's goals related to the design of the retirement plan.

(5c) Assess the feasibility of achieving the sponsor's goals for their retirement plan.

(5f) Design retirement programs that manage retirement risk and are consistent with sponsor objectives.

(5g) Design retirement programs that promote employee behavior consistent with sponsor objectives.

(5m) Recommend an appropriate plan type and plan design features for providing retirement benefits and defend the recommendations.

Sources:
DA-102-13: Evaluating the Design of Private Pension Plans: Costs and Benefits of Risk Sharing

Fundamentals of Private Pensions, McGill et al., 9th Edition, 2010, Chapter 5

Commentary on Question:
Commentary listed underneath question component.

Solution:
(a) Critique the plan provisions with respect to Company ABC's objectives.

Justify your response.

Commentary on Question:
Successful candidates critiqued each plan provision in detail with respect to Company ABC's objectives. Some candidates only described a few plan provisions that help meet the company's objectives rather than critiquing them all individually and received partial credit.

Provision: Vesting
- A vesting period of 2 years will help reduce volatility from turnover of new hires as they must stay with the company in order to be entitled to a benefit
- A vesting period of 2 years may deter younger employees from joining Company ABC since they tend to be a more mobile workforce

1. Continued

Provision: Pensionable Earnings

- Overtime pay included as pensionable earnings will create volatility and uncertainty in projections when determining the expected share of retirement costs
- Overtime pay included as pensionable earnings will create uncertainty in retirement benefits and volatility in company costs

Provision: Employee Contributions

- Employee contributions help share the cost of the pension plan with Company ABC

Provision: Retirement Benefit

- An averaging period of 3 years can lead to more volatile retirement benefits as compared to a longer averaging period (e.g. 5 years)
- The retirement benefit is very generous and would be attractive to younger and long service employees

Provision: Early Retirement Benefit

- Early retirement subsidies are attractive to long service employees as they can retire prior to their normal retirement age with a more generous benefit than actuarial equivalence
- Early retirement subsidies are not service-related which limits retention incentives for long service employees
- Generous early retirement subsidies included in the retirement benefit will create volatility and lead to less predictable plan costs

Provision: Termination Benefit

- Actuarial equivalence reduction helps make the plan costs more predictable
- Might encourage retaining long service employees close to retirement due to the cliff eligibility of the early retirement subsidies

Provision: Portability

- Allowing portability on retirement can cause losses to the pension plan due to anti-selection and lead to volatility in funding requirements
- The plan pays a lump sum on termination which is attractive to a younger workforce as they tend to be more mobile
- Portability on retirement can be attractive to long service employees depending on their personal financial situation (e.g. potential for investment gains, more liquid, etc.)

1. Continued

Provision: Indexation

- The cost of indexing pension benefits can be unpredictable and cause fluctuations in funding requirements
- No defined maximum of indexation can leave the company exposed to costly rises in pension benefits in periods of high inflation
- Indexation of pension benefits to inflation is attractive to employees with long service as their pension does not lose purchasing power over time

(b) Evaluate how the overtime policy aligns with Company ABC's objectives for the defined benefit pension plan.

Commentary on Question:
Candidates struggled with how the overtime policy would affect the sharing of retirement costs. Overall, candidates successfully evaluated how the overtime policy would affect the predictability of company costs, attraction of younger employees and the retention of long service employees.

Share Retirement Costs

- Employees will contribute on lower earnings throughout their career and close to retirement receive large increases in their retirement benefit due to a spike in pensionable earnings within their final 3 years as a result of the overtime policy
- Employees with steep earning profiles in a final average pension plan may cause Company ABC to fund a higher than expected share of the cost

Predictable Company Costs

- Company ABC may have difficulty projecting future benefits as the overtime policy creates uncertainty in future earnings

Attract Younger Employees

- The policy may lower Company ABC's attraction and retention of younger employees as they are given the least priority to receive overtime

Retain Long Service Employees

- The overtime policy will help retain longer service employees as they have priority for overtime hours
- The overtime policy will help retain longer service employees because they have the potential to significantly improve their final average pay close to retirement leading to a higher benefit

(c) Recommend two changes to the plan design if Company ABC wants to keep the overtime policy.

Justify your response.

1. Continued

Commentary on Question:
Most candidates did not receive full credit for this question. Many suggested to exclude overtime pay in the definition of pensionable earnings but failed to recommend another plan design change to mitigate the impact of the overtime policy to help meet the company's objectives. Other valid answers were also accepted and received credit if appropriate justification was provided

Company ABC can make the following plan design changes to meet their objectives given the overtime policy:

- Exclude overtime pay in the definition of pensionable earnings
    - This will eliminate the effect of the overtime policy on the pension plan and help Company ABC meet their need to share retirement costs as it will decrease the likelihood of employees having steep earning profiles
    - Removing overtime pay from pensionable earnings will reduce volatility in retirement benefits and allow Company ABC to better predict their costs to the plan
- Change the retirement benefit from a final average pension plan to a career average pension plan
    - The retirement benefit for career average plans is determined using the associated pay for each period of service. This mitigates the risk that Company ABC will fund an unequal share of the retirement costs due to employees with steeper earning profiles from the overtime policy
    - Career average plans also provide for more predictable company costs than final average pension plans since future earnings do not affect the retirement benefit accrued for previous years of service

2. Learning Objectives:

4. The candidate will be able to evaluate plan design risks faced by sponsors of retirement plans and retiree health plans.

5. The candidate will be able to evaluate sponsor's goals for the retirement plan, evaluate alternative plan types and features, and recommend a plan design appropriate for the sponsor's goals.

Learning Outcomes:

(4a) Identify how plan features, temporary or permanent, can adversely affect the plans sponsor.

(4c) Recommend ways to mitigate the risks identified with a particular plan feature

(5a) Describe ways to identify and prioritize the sponsor's goals related to the design of the retirement plan.

(5e) Identify the ways that regulation impacts the sponsor's plan design goals.

(5f) Design retirement programs that manage retirement risk and are consistent with sponsor objectives.

(5m) Recommend an appropriate plan type and plan design features for providing retirement benefits and defend the recommendations.

Sources:

DA-104-13 Deferred Retirement Option plans (DROP Plans)

DA-100-13 Issues for Implementing Phased Retirement in Defined Benefit Plans

Commentary on Question:

Commentary listed underneath question component.

Solution:

(a) Recommend a valuation assumption change that reduces the impact of the DROP on the actuarial gain or loss.

Justify your response.

Commentary on Question:

Most candidates aptly identified the retirement assumption as the key assumption requiring an update corresponding to the participant behavior expected to occur due to the DROP feature. For maximum points, candidates had to describe the actuarial gain / loss implications of adopting DROP and how updating the retirement assumption would minimize the future gain/losses.

2. **Continued**

The plan should change to use retirement age decrements that better reflect the expected experience of the DROP to minimize volatility of gains/losses due to mis-estimating this assumption.

All else equal, the plan experiences actuarial gains if participants defer retirement beyond the age at which they have access to unreduced benefits.
The DROP is likely to cause certain participants to commence unreduced benefits earlier than they otherwise might. This will increase costs to the plan sponsor. It also will lead to actuarial losses unless the retirement age assumptions are adjusted to reflect the expected decrements with the DROP in place.

(b) Recommend four plan design features that limit the increased cost and financial volatility of adding the DROP.

Justify your response.

Commentary on Question:
Candidates did well in identifying a variety of plan features that could offset the DROP cost and volatility. However, to achieve full credit, in addition to just naming the feature, candidates also needed to describe exactly how the new feature would counteract costs or minimize volatility.

Only four features are listed below; other valid responses with justification also received credit.

Indexing the DROP accounting crediting rate to be based on actual plan investment earnings. This transfers the investment risk, which can lead to larger contribution requirements, to the participant

Only allowing the DROP account benefit to be paid as an annuity would reduce the risk of volatile lump sum payouts and limit up front liquidity drain.

The plan could remove early retirement subsidies on future accruals. This can limit the overall benefits that are accrued by preventing participants from locking in unreduced benefits in their DROP account. However, this could also reduce the effectiveness of the DROP in deterring participants from terminating employment early.

Limiting employment after the end of the DROP period would eliminate the possibility of additional benefits being accrued after the DROP period. This also provides more certainty around the liability associated with any participant who elects DROP.

2. Continued

(c) Explain four regulatory considerations that complicate the adoption of phased retirement programs.

Commentary on Question:
Most candidates were able to cite minimum required distribution age and in-service distributions as regulatory considerations but struggled to identify other considerations. Credit was provided for other valid reasons not listed in solution below.

While no legislation prohibits paying partial benefits before full retirement, regulations don't address how to handle things like commencement of benefits, accrued benefit calculations, and spousal consent for anything but full pension benefits. This creates challenges for plan sponsors related to offsetting partial annuity distributions.

There are limitations as to how early participants can begin in-service distributions before normal retirement date without penalty.

It may be difficult to provide the required disclosures in a manner that is easy for plan participants to understand.

If normal retirement age is reduced to accommodate in-service distributions, it may cause nondiscrimination issues. If partial payment options are only available to phased retirement participants, it could also create nondiscrimination issues depending on the demographics of the participants taking phased retirement

3. Learning Objectives:

9. The candidate will be able to apply the standards of practice and guides to professional conduct.

Learning Outcomes:

(9e) Explain and apply all of the applicable standards of practice related to valuing retirement obligations.

(9f) Recognize situations and actions that violate or compromise Standards or the Guides to Professional Conduct.

Sources:

DA-142-15: ASOP 4 - Measuring Pension Obligations and Determining Pension Plan Costs or Contributions

Embedded Options in Pension Plans: Catalogue of Embedded Options Survey of Prevalence of Embedded Options, pp.1-17

SOA Code of Professional Conduct

AAA Code of Professional Conduct

Commentary on Question:

This question tested candidates' knowledge and application of ASOP No. 4 – Measuring Pension Obligations and Determining Pension Plan Costs or Contributions as pertained to specific situations NOC was considering. Candidates generally performed better on parts (a) and (c) of this question. Candidates that performed well overall demonstrated how the ASOP specifically came in to play for the situation at hand. Reasonable answers not included below were also awarded credit.

Solution:

(a) Describe considerations under Actuarial Standard of Practice No. 4, Measuring Pension Obligations and Determining Pension Plan Costs or Contributions (ASOP 4) when assessing the reasonableness of this change.

- Reflect the different measurement date by either adjusting the data or adjusting the obligations to the measurement date. Adjustments must be reasonable
- Actuary must determine whether the adjustment produces a reasonable result for the purpose of the measurement.
- Things to consider adjusting, if appropriate:
  - Changes in demographics and participant count
  - Length of time since prior measurement
  - Differences in cash flows (BPs, contributions, ROA, expenses)
  - Changes in economic and demographic expectations
  - Plan provision changes

3. **Continued**

- Plan changes between the prior valuation date and the measurement date should be reflected. Plan changes adopted after measurement date may be reflected
- Actuary should consider whether assumptions should be revised (versus simply using same assumptions as prior measurement)

(b) Describe the considerations under ASOP 4 when determining how to value the new benefit provision.

- This plan provision is considered an "embedded option" as its value is derived primarily from the behavior of an underlying economic variable (in this case, investment return)
- It is difficult to measure using deterministic procedures and assumptions due to benefits varying asymmetrically with experience (as described in 3.5.3 in ASOP 4)
  - The deterministic assumption would be that future investment return is exactly equal to the assumption (e.g., 6.25%) in each future year
  - In this case, a COLA would be triggered in every future year
  - This is unreasonable
- Under ASOP 4, actuary should consider using an alternative procedure in this situation
  - Procedure should be based on professional judgment based on purpose of measurement and other factors
  - ASOP 4 provides an illustrative list of options, including stochastic modeling, option-pricing techniques, or assumptions adjusted for asymmetric impact of experience
- One possibility: assume actual return exceeds 6.25% in half of future years and is less than 6.25% in the other half. So, use a COLA assumption for all future years = ½ x inflation assumption. This approach may be reasonable if the 6.25% ROA assumption is interpreted/set as the median return.
- Another possibility: perform stochastic modeling to determine a distribution of future investment returns using underlying CAPM assumptions (expected return, standard deviation, correlation between asset classes). Use model output to set COLA assumption. This approach may be reasonable if the 6.25% ROA assumption is interpreted/set as the mean return.
- Actuary should describe the approach taken such that another actuary could objectively appraise it

3. Continued

(c) Recommend how the actuary should respond to this directive.

Justify your response.

- Under ASOP 4, this is a prescribed assumption set by another party
- Evaluation:
  - ASOP 27 addresses selection of economic assumptions (including inflation) as well as evaluation of prescribed assumptions
  - Assess materiality of assumption: actuary would deem inflation material as COLAs have pronounced effect on liability
  - Review appropriate recent and long-term historical data (ex. Consumer price indices, Implicit price deflator, Inflation forecasts, Yields on government security and debt (nominal and inflation-indexed)
- Response:
  - Discuss with CFO that the assumption is likely unreasonably small over the long term—liabilities and expense would be understated because actual COLAs over the long term would be expected to exceed 1% more often than not
  - Present CFO with evidence to support actuary's claim
  - Consider offering an alternative assumption that the actuary would be willing to sign off on
    - Select and ultimate rates may be a valid compromise (lower short-term, higher long-term)
    - ASOP 27 explicitly allows a select and ultimate inflation assumption
  - Code of Prof Conduct, Precept 10 is relevant: actuary should exercise courtesy and cooperation
- Disclosure: if the CFO cannot be convinced to change the assumption to something the actuary can support, certain items must be disclosed:
  - Source of prescribed assumption (who set it)
  - That the assumption significantly conflicts with what would be reasonable for the purpose of the measurement
  - ASOPs 4 and 41 address communication/disclosure related to prescribed assumptions
  - Code of Prof Conduct, Precept 4 is relevant: actuary should ensure communication is clear and appropriate
- Code of Prof Conduct, Precept 8 is relevant: actuary should exhibit control of his/her work product and ensure it's not used to mislead other parties

4. Learning Objectives:

1. The candidate will be able to analyze different types of registered/qualified retirement plans and retiree health plans.

3. Candidate will understand how to analyze the risks faced by retirees and the participants of retirement plans and retiree health plans.

5. The candidate will be able to evaluate sponsor's goals for the retirement plan, evaluate alternative plan types and features, and recommend a plan design appropriate for the sponsor's goals.

7. The candidate will be able to analyze/synthesize the factors that go into selection of actuarial assumptions.

8. The candidate will be able to recommend and advise on the financial effects of funding policy and accounting standards in line with the sponsor's goals, given constraints.

Learning Outcomes:

Describe the structure of the following plans:

(a) Traditional defined benefit plans
(b) Defined contribution and savings plans
(c) Hybrid plans
(d) Retiree Health plans
(e) Other alternative retirement plans such as shared risk plans, target benefit plans, etc.

Given a plan type, explain the relevance, risks and range of plan features including the following:

(a) Plan eligibility requirements
(b) Benefit eligibility requirements, accrual, vesting
(c) Benefit/contribution formula, including the methods of integration with government-provided benefits
(d) Payment options and associated adjustments to the amount of benefit
(e) Ancillary benefits
(f) Benefit subsidies and their value, vest or non-vested
(g) Participant investment options
(h) Required and optional employee contributions
(i) Phased retirement and DROP plans
(j) Risk-sharing provisions

(3c) Evaluate benefit adequacy and measure replacement income for members of a particular plan given other sources of retirement income.

(5a) Describe ways to identify and prioritize the sponsor's goals related to the design of the retirement plan.

4. Continued

(5d) State relationships or recognize contradictions between a sponsor’s plan design goals and the retirement risks faced by retirees.

(5e) Identify the ways that regulation impacts the sponsor’s plan design goals.

(5f) Design retirement programs that manage retirement risk and are consistent with sponsor objectives.

(5g) Design retirement programs that promote employee behavior consistent with sponsor objectives.

(7a) Evaluate appropriateness of current assumptions.

(7b) Describe and explain the different perspectives on the selection of assumptions.

(8f) Demonstrate the sensitivity of financial measures to given changes in plan design.

Sources:
Fundamentals of Private Pensions, McGill et al., 9th Edition 2010, Chapters 9,10,12

DA-173-18: How accurately does 70% Final Employment Earnings Replacement Measure Retirement Income (In) Adequacy? Introducing the Living Standards Replacement Rate (LSRR) – (sections 3.1, 3.2, 3.4, 4 & 5 and Appendices background only)

Managing Post-Retirement Risks: Strategies for Secure Retirement, 2020

DA-102-13: Evaluating the Design of Private Pension Plans: Costs and Benefits of Risk Sharing

DA-136-17: Selection of Actuarial Assumptions, Consultant Resource Manual, SOA Version, Mercer, pp.5-69

DA-140-21: ASOP 27 Selection of Economic Assumptions for Measuring Pension Obligations

DA-804-19: FASB Accounting Standards Codification Topic 715

DA-179-19: Introduction (A58), IFRS1 (paragraphs 1-40 & Appendix A), IAS 19, IFRIC14.

4. Continued

Commentary on Question:
Part a and b were numerical questions and both were answered well, with many candidates receiving full credit for these parts. Candidates did okay on part c which tested their comprehension and application of the material.

The question tested the viability of converting a DB plan into a DC plan and maintaining plan sponsors' objectives.

Solution:

(a) Calculate the Service Cost under U.S. Accounting Standard ASC 715 as a percentage of base pay for the existing DB plan for the average participant.

Show all your work.

Commentary on Question:
See above

The model solution for this part is in the Excel spreadsheet.

(b) Calculate the flat DC contribution as a percentage of base pay for the average participant necessary to restore the lump sum value lost due to the DB plan freeze.

Show all your work.

Commentary on Question:
See above

The model solution for this part is in the Excel spreadsheet.

(c) Critique the appropriateness of this suggested design based on the stated goals of Company ABC.

Commentary on Question:
See above

Critique of Using Stated Assumptions from (b) to Define Everyone's Rate

- Determining the contribution % using average age, service and pay will not produce an appropriate DC replacement for every employee
- Generally, using plan average age, service and pay will produce too high a DC % for younger employees/new hires to replace future value of lost DB plan
- Using plan averages will produce too low a result for older employees to replace future value of lost DB plan
- Using 0% pay increase assumption is not reasonable

4. Continued

- Using the same average retirement age with no decrements may be appropriate for this type of analysis since a DC contribution target % must be pegged to a single age
- Using a date earlier than the normal retirement age (65) will build in the value of the retirement subsidy into the DC plan. Is this intended?

Critique of Appropriateness of Design of plan to Meet Sponsor's Stated Goals

- Future hires will determine long term cost profile of plan as current participants with the frozen DB benefit retire
- New hires receiving the high DC % contribution will be provided a higher benefit at retirement than the DB plan would have provided
- May exceed legislated DC limits for some participants
- The 3 goals stated by the company are not able to all be satisfied at the same time for a going concern company
- Goal a) and c) are possible to achieve together, but would need to provide a different DC % for each employee and it would need to change every year, which violates goal b)
- Goal b) and c) are possible to achieve together, but this will not produce the same DB plan value for all employees
- Goal a) and b) cannot be achieved together
- DC plan will have a larger P&L cost of annual accruals vs. that of the DB plan since the goal is to give all employees the same DC % AND replace DB lost value -> does not immediately meet plan sponsor goal
- This is because the DC plan does not build in decrements or discounting to determine the annual contribution provided; whereas, the DB plan cost does
- However, moving to DC plan will remove future volatility in Balance Sheet since shifting risks to employees (i.e. interest rate, return on assets etc.)
- The DB service cost will increase over a person's career in a final average pay plan due to shortening of discount period and be volatile due to different than expected salary increases and changing interest rates
- The DC contribution will increase due to salary increases but be more stable since not dependent on interest rates or past service impacts

5. **Learning Objectives:**

4. The candidate will be able to evaluate plan design risks faced by sponsors of retirement plans and retiree health plans.

Learning Outcomes:

(4c) Recommend ways to mitigate the risks identified with a particular plan feature

(4e) Assess the impact of possible changes in plan design due to changes in legislation.

Sources:

DA-166-17: Shifting Public Sector DB Plans to DC, pp. 1-22

DA-114-13: Risk Management and Public Plan Retirement Systems - Appendices only (pp. 1-33 background only)

Commentary on Question:

This question was testing the candidates' ability to think like an employer for the design of an early retirement incentive program (ERIP) and comparing the similarities and differences in the public vs. private sector. The question was generally well done. Candidates generally did well to highlight eligibility and design considerations for an ERIP, but missed more specific points from a public or private plan perspective.

Solution:

Compare and contrast the considerations when designing an early retirement incentive program for the following:

(i) Public sector pension plan

(ii) Private sector pension plan

<u>Similarities:</u>

- Eligibility criteria for the program and target employees – need to consider the overall goal of the ERIP: who the program is targeting, and estimated take up rate. For example: all employees reaching age 62 by date X.
- Design of ERIP – what are the enhancements being offered by the program? For example: improving early retirement subsidies, additional years of service, improved payment options, etc.
- Cost considerations and affordability – offering additional benefits comes with a cost. What is that cost? Can the plan afford it, given current and projected funded status?
- Intergenerational inequity – the enhancements offered by the program only benefit those who elect to take advantage of the ERIP, which means additional costs are picked up by the plan and "future" service. Is that fair?
- Employee morale – how will the ERIP affect employee morale, of those eligible and not eligible for the ERIP?

5. **Continued**

- Timing – when is the window of eligibility and window of election for the ERIP
- Communication strategy – how will the program be announced? How can employees ask questions? Will there be a waiver for the employee to sign?

Considerations specific to public sector pension plan:

- Union rejection – public sector plans typically cover unionized employees. Any plan changes will need to go through union approval.
- Generous benefit – public sector plans typically offer more generous benefits (in part since they are not eligible for social security). The ERIP design would need to take these generous plan provisions into consideration.
- Tax payers – ultimately, the costs of the ERIP will be passed on to the tax payers. How will they feel about this?
- Societal consideration – there are other budgetary uses for public funds. For example, public programming (hospitals, schools, etc.). Is the ERIP the best use for the funds?
- Diffuse governance structure – there are many stakeholders in a decision for a public sector pension plan, and many parties will have a say in making the decision, many of which may lack pension knowledge or have different motivations (i.e. elected officials).

Considerations specific to private sector pension plan:

- Well defined decision makers – unlike for the public sector, private sector plans have well defined decision makers, so creating an ERIP will go through an easier approval process.
- Profit motive – private companies have a straight forward profit motive, so the main consideration in whether or not to offer an ERIP comes down to whether it makes sense from a cost perspective. Will it reduce future costs?
- Less generous benefits – private plan benefits are generally less generous, which means an ERIP has greater value in motivating employee behavior.
- Post-retirement health benefit – private companies can use the continuation of post-retirement health benefits as an incentive in the ERIP.
- Specialized skills – private plan employees tend to be less homogenous (compared to the public sector), the wrong design in the ERIP, and unintended take up rates, would mean loss of valuable knowledge.

6. Learning Objectives:

6. The candidate will be able to analyze, synthesize and evaluate plans designed for executives or the highly paid.

Learning Outcomes:

(6a) Given a specific context, synthesize, evaluate and apply principles and features of executive deferred compensation retirement plans.

(6b) Given a specific context, apply principles and features of supplemental retirement plans.

(6c) Integrate a plan for executives with the basic benefit plan.

Sources:

Retirement Plans - 401(k)s, IRAs and Other Deferred Compensation Approaches, Allen et al., 12th Edition, 2018 – Chapter 14

DA-156-15 Moving from a DB Executive Retirement Plan to a DC Executive Retirement Plan, October 2014 (parts 1, 2 & 4)

DA-802-13 Internal Revenue Code 409A and Non-Qualified Plan Design Consideration

DA-803-13 Evaluating Financing Options for Nonqualified Benefit Plans

Commentary on Question:

This question tested the candidates' understanding of executive benefits, including various tax treatments and funding options. Many candidates did well on parts a) and c), while many struggled with parts b) and d).

Solution:

(a) Describe the advantages of a Supplemental Executive Retirement Program (SERP) from the plan sponsor's perspective.

Commentary on Question:

Candidates generally did well on this question. Candidates did not receive credit if a term like "golden handcuff" was used without any accompanying description. To receive full credit, candidates had to describe at least four advantages with accompanying descriptions. Credit was also provided for other relevant answers, including (but not limited to) descriptions of golden handshakes, recognizing incentive pay, and restoring lost benefits.

- **Midcareer recruiting**: A supplemental plan can offer past service and offset any potential benefit loss of the executive leaving their current position.
- **Umbrella plan:** A supplemental plan can serve as one uniform plan for executives that may frequently transfer within the organization, resulting in administrative efficiencies.

6. Continued

- **Golden Handcuffs:** The company can encourage executives to stay with the organization by applying stringent vesting requirements on a supplemental plan.
- **Noncompete Provisions:** Supplemental plans can have provisions that make the benefit forfeitable if an executive goes to a competitor.

(b) Describe the differences in tax treatment for the participant in the following:

(i) Defined benefit SERP

(ii) Defined contribution SERP

Commentary on Question:
Most candidates struggled with this question. Many candidates indicated that defined benefit (DB) SERP benefits are only taxable at retirement, which is not true. Most candidates failed to mention that defined contribution (DC) benefits are taxable upon becoming fully vested and annually thereafter.

DB SERP:

- DB SERP benefits are taxed when the benefit is "known and determinable" (generally when the retirement date is known, which can be upon termination of employment depending on the specific plan provisions)
- The final taxable amount is generally the present value of the benefit. Some companies and executives choose to use an early inclusion technique rather than pay the entire taxable amount at once. This presents risk, as if certain assumptions are not met (mortality for example), there is a possibility to create unintended additional benefits, since the executive's benefit cannot be taken away once taxed.

DC SERP:

- DC benefits are taxed as the benefit becomes vested
- When the participant is fully vested, accruals are taxed on an annual basis.

(c) Describe the risks inherent in four different SERP funding options from the following perspectives:

(i) Employer

(ii) Employee

6. **Continued**

Commentary on Question:
Most candidates scored very well on this piece. To receive full credit, the candidate had to provide risks from both the employer and employee perspectives. Some candidates simply explained the funding vehicle rather than describing inherent risks. While only four vehicles were required for full credit, there are more than four funding options. Credit was also provided if candidates described risks associated with other available SERP funding options.

Corporate owned life insurance:

- The plan sponsor owns life insurance on the executive.
- The policy is held as a corporate asset until the death of the executive, so either corporate assets or loans against the policy must be used to make the payment.
- From the employee's perspective, this approach offers very little benefit security.
- Executive is taxed upon receipt of benefit.
- This approach has been under legal scrutiny for several years.

Taxable Securities:

- The plan sponsor creates a portfolio of stocks and bonds to fund future payments
- Executive receives very little benefit security
- Executive is taxed upon receipt of benefit; plan sponsor is subject to taxes on investment income
- Plan sponsor is subject to the investment risk of the portfolio

Rabbi trusts:

- The plan sponsor creates an irrevocable trust for the executives.
- Assets are limited to distribution of benefits (but are subject to creditor claims)
- Executive is taxed upon receipt of benefit

Secular trusts:

- The plan sponsor creates an irrevocable trust for the executives.
- These assets are NOT limited subject to creditor claims; this benefit is not considered a corporate asset
- Executive is taxed as benefits become vested, as well as on investment growth in the trust

6. **Continued**

(d) Identify restrictions to benefit distributions for executives under Internal Revenue Code Section 409A.

Commentary on Question:
While some candidates received full credit, many candidates did not attempt this part of the question or provided brief and inadequate responses. To receive full credit, candidates needed to comment on the ways Section 409A restricts an executive from both a form of payment and timing of benefit commencement perspective.

- Per Section 409A, decisions about the time and form of payment must be made by the end of the calendar year that precedes the calendar year in which the benefit was accrued.
- Any subsequent changes to form of payment decisions will delay the payment for at least 5 years after the original payment date.
- Payments are delayed 6 months after separation from service for specified employees
- Benefits cannot generally be paid from a foreign trust
- Contributions to a trust containing nonqualified benefits are restricted if the qualified plan is not adequately funded
- Payments can only be made at certain points, including but not limited to:
  - Separation from service
  - Disability
  - Death
  - Specified time under the plan
  - Change in control of the corporation
  - Unforeseeable emergency

7. **Learning Objectives:**

1. The candidate will be able to analyze different types of registered/qualified retirement plans and retiree health plans.

5. The candidate will be able to evaluate sponsor's goals for the retirement plan, evaluate alternative plan types and features, and recommend a plan design appropriate for the sponsor's goals.

Learning Outcomes:
Given a plan type, explain the relevance, risks and range of plan features including the following:

(a) Plan eligibility requirements
(b) Benefit eligibility requirements, accrual, vesting
(c) Benefit/contribution formula, including the methods of integration with government-provided benefits
(d) Payment options and associated adjustments to the amount of benefit
(e) Ancillary benefits
(f) Benefit subsidies and their value, vest or non-vested
(g) Participant investment options
(h) Required and optional employee contributions
(i) Phased retirement and DROP plans
(j) Risk-sharing provisions

(5j) Advise a plan sponsor regarding the choice of design elements for their retiree health program.

Sources:
DA-823-21: 2019 Retiree Health Care Survey, Plan Sponsor Challenges and Market Opportunities

Fundamentals of Retiree Group Benefits, Yamamoto, Dale H., 2nd Edition, 2015 (Chapter 1)

Commentary on Question:
This question was trying to test candidates' knowledge of retiree health benefit plan structures and features as they relate to a sponsor's goals and objectives. Relevant commentary on each section is listed below.

Solution:
(a) Describe four design options Company ABC could consider for its pre-Medicare retirees that meet their objectives.

Commentary on Question:
Candidates did well on part a. Credit was given for design objectives not listed below that would also work for pre-Medicare retirees.

7. Continued

- More Stringent Eligibility Requirements – for example, increasing eligibility in both age and service to reduce the number of participants who are eligible
- Service-Related Benefits – introducing benefits where the employer cost depends on the employee's years of service
- Implementing cost sharing provisions – adding retiree contributions, copays, deductibles
- Establish the employer-provided benefit as a fixed subsidy – for example, setting the subsidy to a fixed dollar amount rather than a percentage of plan costs

(b) Compare and contrast the two options from the following perspectives:

(i) Retirees

(ii) Employer

Commentary on Question:
Most candidates received partial credit on this question. Full credit was given only if all perspectives were considered for each option.

Option 1:
Retiree perspective:
- Retirees bear more risk under this option. If actual health care expenses exceed the HRA subsidy, the retiree covers the remainder out of pocket.
- Potential for lower premiums in plan options, leaving more flexibility to use HRA dollars to cover other health care expenses

Employer perspective:
- Simplified administration – private vendor handles the enrollment and provides customer service and decision support tools
- Cost containment via a fixed dollar subsidy, versus volatile or catastrophic health care costs under the previous self-insured arrangement

Option 2:
Retiree perspective:
- Retirees bear less risk under this option compared to the HRA+Exchange option since the premiums are defined
- Coverage may not be adequate depending on carrier/contract specifications

Employer perspective:
- Cost containment over premiums in the fully insured arrangement, versus volatile or catastrophic health care costs under the previous self-insured arrangement, however, may still be some volatility compared to the fixed-dollar subsidy
- For paternalistic employer, integrated health care coverage for the employee group

7. Continued

(c) Describe Company ABC's design considerations when developing specifications for the new HRA program.

Commentary on Question:
To receive full credit, candidates needed to answer the question specifically to the HRA program. Many candidates answered with respect to health programs in general and did not focus on the HRA specifics.

- Do retirees have to enroll in coverage through the private exchange to be eligible for the HRA or can they obtain coverage on their own and still be eligible?
- How will the annual HRA credit be determined? Flat-dollar, service based, age-based?
- Will the annual HRA credit increase with inflation?
- Do unused HRA credits rollover into the next year?
- Will there be interest crediting on the outstanding HRA balance?
- Will there be an additional HRA credit for covered spouses or dependents?
- Will the HRA cover all health care related expenses or only premiums?
- How will catastrophic claims be handled?

8. Learning Objectives:

8. The candidate will be able to recommend and advise on the financial effects of funding policy and accounting standards in line with the sponsor's goals, given constraints.

Learning Outcomes:

(8a) Perform valuations for special purposes, including:
- (i) Plan termination/windup
- (ii) Accounting valuations
- (iii) Open group valuations
- (iv) Plan mergers, acquisitions and spinoffs

(8d) Advise plan sponsors on accounting costs and disclosures for their retirement plans under various standards and interpretations.

Sources:

DA 804-19: FASB Accounting Standards Codification Topic 715

Commentary on Question:

Commentary listed underneath question component.

Solution:

Calculate the following under U.S. Accounting Standard ASC 715:

- (i) Revised 2021 Net Periodic Pension Cost
- (ii) Accumulated Other Comprehensive Income as of December 31, 2021
- (iii) Funded status as of December 31, 2021

Show all work.

Commentary on Question:

Part (i) required candidates to determine the curtailment impact in addition to the impact of the enhanced benefits as part of the revised net periodic pension cost calculation. However, several candidates incorrectly included the actuarial gain/loss due to change in the discount rate at July 1, 2021 as part of the curtailment impact. Many candidates struggled with the accounting principles related to curtailments and special termination benefits. Both the curtailment impact as well as the impact of the enhanced benefits are to be recognized immediately. The actuarial gain/loss due to the change in the discount rate assumption is amortized. Successful candidates determined the expected PBO at July 1, 2021 using the duration provided in the case study and then used that PBO to determine the curtailment impact.

The model solution uses simple interest; credit was also provided if candidates used compound interest.

The model solution for this part is in the Excel spreadsheet.

9. **Learning Objectives:**

8. The candidate will be able to recommend and advise on the financial effects of funding policy and accounting standards in line with the sponsor's goals, given constraints.

Learning Outcomes:

(8a) Perform valuations for special purposes, including:
- (i) Plan termination/windup
- (ii) Accounting valuations
- (iii) Open group valuations
- (iv) Plan mergers, acquisitions and spinoffs

(8d) Advise plan sponsors on accounting costs and disclosures for their retirement plans under various standards and interpretations.

Sources:

DA-157-18: PWC IFRS Manual of Accounting Ch. 12 (excluding FAQ 12.113.2 to 12.127.1)

DA-185-20: Plan Curtailments & Settlements Under FASB ASC Topic 715 Relating to Plan Terminations, Part 1

DA-186-20: Plan Curtailments & Settlements Under FASB ASC Topic 715 Relating to Plan Terminations, Part 2

DA-168-19: IFRS and US GAAP: Similarities and Differences, Ch. 5 only

DA-804-19: FASB Accounting Standards Codification Topic 715

Commentary on Question:

This question was intended to test if candidates could apply the accounting standards to a realistic example of plan termination timing. Most candidates provided basic accounting concepts. Well prepared candidates were able to demonstrate a deeper understanding of how to apply the accounting concepts to this scenario. Many candidates showed poor understanding of accounting principles for a terminating plan.

Solution:

(a) Describe the effect on the 2021 Net Periodic Pension Cost (NPPC) under U.S. Accounting Standard ASC 715 (ASC 715) if Company XYZ's pension plan prior to the termination was structured as:

- (i) Open and ongoing
- (ii) Closed to new entrants
- (iii) Frozen for all participants

9. Continued

Commentary on Question:
The intention of this question was to test candidates' knowledge of the differences in accounting treatment of an amendment to terminate a plan under ASC 715 from the three different statuses.

Most candidates responded there would be a curtailment in 2021 due to the plan termination, however, the curtailment would actually occur during 2020 since that is when the plan amendment was adopted (and the termination was probable to occur). Credit was also given for responses which assumed curtailment accounting occurred during 2021.

Open and Closed plans would be treated the same:
- Service cost would be based on a full year of accruals
- PBO used for interest cost would reflect accruals to 12/31/2021
- EROA should be based on portfolio allocation
  - o Consideration should be given if the sponsor plans to reduce the equity allocation during the year or wait until the following year
- Gain/Loss (G/L) Amortization
  - o Corridor would shrink for unfunded plans or plans where PBO is used for corridor since the PBO is reduced
  - o No change to amortization period since active employees still accruing
- No PSC amortization since fully recognized during 2020 curtailment

Frozen plans
No change to any component of NPPC, except for possibly EROA for the same reason as mentioned above

(b) Compare and contrast the calculation of the following:

(i) 2022 NPPC under ASC 715

(ii) 2022 Defined Benefit Cost under International Accounting Standard IAS 19 (IAS 19)

Commentary on Question:
This part was testing candidates' knowledge of the considerations that need to be made between the plan termination/wind-up date and settlement date. Candidates responding only with the similarities and differences in components of NPPC under ASC 715 and DBC under IAS 19 without relating it to the plan termination received minimal points.

9. **Continued**

	ASC 715	IAS 19
Service Cost	No SC for accruals after 2021	No SC for accruals after 2021
Interest Cost	PBO should reflect no further accruals Consideration should be given if estimated plan term cost should be reflected in PBO Assumptions should reflect any changes needed due to plan term If plan term PBO is not used, no change in method to determine DR, else use DR that reflects short time until settlement	DBO should reflect no further accruals DR should still reflect old method. IC based on net funded status
EROA	EROA assumption may be adjusted to reflect shift to more liquid assets and less risky assets	*N/A – see IC*
Net g/l	Amortized over average remaining life expectancy instead of average future working lifetime	No difference from before - g/l's are immediately recognized
PSC	Curtailment Accounting would have been done for FY2020 and all outstanding bases would have been recognized	N/A - Plan Change would have been recognized in FY2020 at time of plan term amendment

9. Continued

(c) Explain how the 2023 NPPC under ASC 715 would be calculated.

Commentary on Question:
Most candidates were able to identify there would be a remeasurement during the year which would result in ½ year of NPPC calculated normally and then $0 for the remainder of the year.

The typical expense calculation would be recognized for 1/1/2023-6/30/2023. PBO should be based on plan termination estimates. IC and EROA should reflect expected payments, contributions, and settlement discount rates.

The plan would then be remeasured on 6/30/2023 (or final asset distribution date) to reflect the final contribution and asset distributions, which zeroes out the assets and liabilities. Settlement accounting would be required which recognizes the remaining AOCI at the remeasurement date. This would then leave all balance sheet components at 0.

10. Learning Objectives:

1. The candidate will be able to analyze different types of registered/qualified retirement plans and retiree health plans.

3. Candidate will be able to analyze the risks faced by retirees and the participants of retirement plans and retiree health plans.

4. The candidate will be able to evaluate plan design risks faced by sponsors of retirement plans and retiree health plans.

5. The candidate will be able to evaluate sponsor's goals for the retirement plan, evaluate alternative plan types and features, and recommend a plan design appropriate for the sponsor's goals.

Learning Outcomes:

Describe the structure of the following plans:

- (a) Traditional defined benefit plans
- (b) Defined contribution and savings plans
- (c) Hybrid Plans
- (d) Retiree Health plans
- (e) Other alternative retirement plans such as share risk plans, target benefit plans, etc.

Given a plan type, explain the relevance, risks and range of plan features including the following:

- (a) Plan eligibility requirements
- (b) Benefit eligibility requirements, accrual, vesting
- (c) Benefit/contribution formula, including the methods of integration with government-provided benefits
- (d) Payment options and associated adjustments to the amount of benefit
- (e) Ancillary benefits
- (f) Benefit subsidies and their value, vest or non-vested
- (g) Participant investment options
- (h) Required and optional employee contributions
- (i) Phased retirement and DROP plans
- (j) Risk-sharing provisions

(3a) Identify risks faced by retirees and the elderly.

(3b) Describe and contrast the risks face by participants of:

- (i) Government sponsored retirement plans
- (ii) Single employer sponsored retirement plans
- (iii) Multiemployer retirement plans, and
- (iv) Social insurance plans

10. Continued

(3c) Evaluate benefit adequacy and measure replacement income for members of a particular plan given other sources of retirement income.

(4a) Identify how plan features, temporary or permanent, can adversely affect the plans sponsor.

(4b) Assess the risk from options offered, including:
- (i) Phased retirement
- (ii) Postponed retirement
- (iii) Early Retirement
- (iv) Option factors
- (v) Embedded options
- (vi) Portability options

(5a) Describe ways to identify and prioritize the sponsor's goals related to the design of the retirement plan.

(5b) Assess the tradeoffs between different goals.

(5h) Evaluate the pros and cons from both a sponsor and employee perspective of introducing options that impact the labor force demographics.

(5m) Recommend an appropriate plan type and plan design features for providing retirement benefits and defend the recommendations.

Sources:

Fundamentals of Private Pensions, McGill et al., 9th Edition, 2010
- Chapters 5 & 9

Morneau Shepell Handbook of Canadian Pension and Benefit Plans, Shepell, Morneua, Whiston, Bethune and Clooney, J. Gregory, 16th Edition, 2016
- Chapter 3

DA-102-13: Evaluating the Design of Private Pension Plans: Cost and Benefits of Risk Sharing

DA-107-13: Green DB Eliminate Wasteful Practices and Make Your DB Plan Sustainable

DA-114-13: Risk Management and Public Plan Retirement Systems, Appendix only

DA-166-17: Shifting Public Sector DB Plans to DC, pp. 1-22

10. Continued

Commentary on Question:
Most candidates answered this question very well, with many earning full points for their answers. This was not a difficult question as the concepts tested are central to this exam and the question format and plan features were straightforward to analyze.

Solution:

(a) Describe the differences in the following risks between Option 1 and Option 2 from the perspective of Company XYZ:

(i) Longevity risk

(ii) Inflation risk

(iii) Retirement risk

Commentary on Question:
Points were awarded for other reasonable answers that explained the risk differences between the two options. The few candidates who answered the question from the perspective of the participants did not receive credit for their answer.

(i) Longevity Risk
Option 1 has subsidized survivor pension, therefore greater longevity risk to the employer as potentially covering the cost of the spouse as well

(ii) Inflation Risk
Option 1 provides higher uncertainty of inflation costs and therefore has more downside risk
Depending on long-term inflation assumptions, Option 1 may provide higher inflation cost to the plan

(iii) Retirement Risk
Early retirement reduction factor may make employees stay until unreduced at age 65 in option 2
In low inflation environment, employees may decide to retire under option 1 to get guaranteed indexation

10. Continued

(b) Evaluate each plan provision independently under Option 1 and Option 2 from the perspective of:

(i) Employee A

(ii) Employee B

Justify your response.

Commentary on Question:
The model solution below provides an answer that would receive full credit. Credit was also awarded if a candidate had different rationale that still made sense. Few candidates commented on fairness changes set out below.

(i) **Lifetime Pension**

Member A
Lifetime pension for one year of service under Option 1
= 1.4% x 50,000 + 2.0% x ($100,000)
= $2,700
Lifetime pension for one year of service under Option 2
= 1.80% x 150,000 =
= $2,700
No change to lifetime pension

Member B
Since all the member's income is less than $50,000, member will have an increase in pension with Option 2 due to the accrual rate increase from 1.40% to 1.80%
This accrual rate is fairer to this member since member has the same accrual rate as everyone else for all their income

(ii) **Indexation**

Members A and B
Option 1 provides some protection against high inflation
Option 2 provides protection against low inflation

(iii) **Early Retirement Reduction**

Member A
Member is not expected to retire before age 60 so may not affect behavior under Option 1

10. Continued

Reasonably large reduction under option 2, therefore may delay retirement

Member B
Member expecting to retire before age 60, therefore will get subsidized early retirement under Option 1
Very large reduction under Option 2, which may cause them to retire later

Increased early retirement reduction in Option 2 fairer to all employees, was subsidizing early retirement under Option 1

(iv) **Normal Form of Pension**

Member A
Member is single, so change to normal form has no effect on pension

Member B
Member is married so will now have to pay for joint and last survivor coverage if elect a joint survivor pension

Same pension option for all employees is fairer, was subsidizing married members under Option 1.

(c) Calculate the replacement ratio provided by the pension plan as a percentage of final average earnings at retirement for Employee A assuming all service was earned under:

(i) Option 1

(ii) Option 2

Show all work.

Commentary on Question:
Most candidates answered this part correctly. The model solution for this part is in the Excel spreadsheet.

11. Learning Objectives:

3. Candidate will be able to analyze the risks faced by retirees and the participants of retirement plans and retiree health plans.

7. The candidate will be able to analyze/synthesize the factors that go into selection of actuarial assumptions.

8. The candidate will be able to recommend and advise on the financial effects of funding policy and accounting standards in line with the sponsor's goals, given constraints.

Learning Outcomes:

(3a) Identify risks faced by retirees and the elderly.

(3b) Describe and contrast the risks face by participants of:
- (i) Government sponsored retirement plans
- (ii) Single employer sponsored retirement plans
- (iii) Multiemployer retirement plans, and
- (iv) Social insurance plans

(7b) Describe and explain the different perspectives on the selection of assumptions.

(7d) Recommend appropriate assumptions for a particular type of valuation and defend the selection.

(8a) Perform valuations for special purposes, including:
- (i) Plan termination/windup
- (ii) Accounting valuations
- (iii) Open group valuations
- (iv) Plan mergers, acquisitions and spinoffs

Sources:

DA-174-18: An Improved Application of the Variable Annuity

DA-140-21: ASOP 27 - Selection of Economic Assumptions for Measuring Pension Obligations

DA-188-21: AAA practice note on Variable Annuity Plans - pp. 6-20 and Appendix (pp. 55 -58)

Commentary on Question:

This question requires candidates to demonstrate understanding of variable annuity and accounting considerations. In addition, candidates are expected to explain the interaction between the hurdle rate and inflation. In general, candidates did better on part c than on either part a or b.

11. **Continued**

Most candidates did not fully answer the questions asked in the answers they provided. They provided general answers about ASOP 27, setting a discount rate assumption, and the hurdle rate instead of applying their knowledge to this specific question.

Solution:

(a) Describe how Actuarial Standard of Practice No. 27, Selection of Economic Assumptions for Measuring Pension Obligations, applies to the selection of the discount rate assumption under U.S. Accounting Standard ASC 715 (ASC 715) for a defined benefit pension plan.

Discount rate can be determined with market yields at the end of the reporting period on high quality fixed-income instruments.
Section 3.13 of ASOP 27 does require the actuary to use the guidance set forth in the standard whenever the actuary has an obligation to assess the reasonableness of a prescribed assumption.
Section 3.9 (Selecting a Discount Rate) of ASOP 27 described the discount rate as a rate that is used to calculate the present value of expected future plan payments. Also, a discount rate may be a single rate or a series of rates, such as a yield curve.
Specifically, section 3.9 (Selecting a Discount Rate) of ASOP 27 includes "Market-Consistent Measurement" where the discount rate may be approximated by market yields for a hypothetical bond portfolio whose cash flows reasonably match the pattern of benefits expected to be paid in the future.

(b) Describe the unique considerations when setting the discount rate assumption under ASC 715 for a Variable Annuity Plan.

The sponsor's obligation is independent of market interest rates. Because the obligation is tied directly to the performance of the portfolio of assets, changes in market interest rates have no effect on the sponsor's obligation.
Section 3.12 of ASOP 27 deals with the consistency of material economic assumptions selected by the actuary and generally requires that all such assumptions for a particular measurement be consistent.
In some cases, the actuary will be required to use a prescribed assumption.
Some actuaries read section 3.6 of ASOP 27 as requiring that the actuary select an expected return on assets that represents a reasonable expectation of returns on the actual asset portfolio.
For complex variable annuity options, the actuary should consider using alternative valuation procedures, such as stochastic modeling, option-pricing techniques, or deterministic procedures in conjunction with assumptions that are adjusted to reflect the impact of variations in experience from year to year.

11. **Continued**

(c) Describe the interaction between the hurdle rate and inflation in a Variable Annuity Plan.

Plan administrator establishes a hurdle rate, which can be set as the pension plan fund's targeted real rate of investment return.
The difference between the hurdle rate and the plan fund's actual investment return is used to adjust monthly pensioner payments each year
For example, if hurdle rate is 4% per annum and actual investment returns for a particular year are 6%, members would receive a 2% increase in their monthly pensions.
If the selected hurdle rate is close to the average real rate of return of the plan's underlying assets over the long-term, retirees are not exposed to inflation risk.
This is because the pension increase average will be close to the average rate of inflation over the long term.
With a well selected hurdle rate that approximates the pension plan fund's real rate of return, and well managed investments, variable annuities have performed very well and average annual pension increases have been comparable to inflation over time.
However, if the real rate of return is declining, the inflation protection would diminish unless the hurdle is adjusted over time to account for the decline.