DP-RU Complete Illustrative Solutions
Fall 2009

1. Learning Objective:

The candidate will be able to analyze data for quality and appropriateness.

Source: ASOP 23

Commentary from Graders:
This question was intended to ensure candidates understand the professional standards for assessing data quality.

Question:

(a) Describe how to ensure that the membership data is reasonable and consistent.
(b) Describe the tasks you are not responsible to complete as part of your review of the membership data.
(c) Itemize what should be included in your communication of the valuation results to the plan sponsor, as it relates to the membership data.

Solution:

(a) Follow ASOP 23

- Use professional judgment to decide if review is needed and practical
  - Yes, since new client
- Identify the data needed/Selection of data
  - Review plan design
  - Discuss scope of project(s) with client
  - Consider elements that are desired
  - Other data available?
    - Cost and feasibility of obtaining alternative data
    - Benefit gained from alternative data
  - Method used to gather the data (sampling?)
- Review the data obtained
  - Is the data current?
  - Known limitations?
  - Significant events that may impact census data
  - Review of definitions of data elements that were provided
    - Appropriateness for intended purpose
    - Consistency with plan provisions
    - Data elements desired but not provided
  - Consider any review already performed by client/provider
  - Identify aspects of the data that have largest impact on results.
  - Check for reasonableness and comprehensiveness of data
    - Identify missing or incomplete data
    - Compare versus a prior data file for consistency

1. Continued

- Check certain fields did not change (DOB)
- Check certain fields changed as expected (Service)
- Check certain fields changed in a reasonable manner (earnings)
- Perform a membership reconciliation to ensure that all members are accounted for

Check current data for internal consistency

Confirm with client that all significant events have been reflected in census data

Establish approach for data corrections

- Make assumptions where data is not available
- Ask client to provide missing information or other data queries

(b) Use professional judgment in performing the review

Not required to review:

- Data not related to nature of assignment
  - e.g., if extraneous data elements provided
- In greater detail than required for the project scope
  - Data that has immaterial impact on results
  - Data needs to yield appropriate results, not perfect
- Request additional data if deem time/cost greater than benefit gained
- Determine whether data falsified or is intentionally misleading
- Develop additional tests solely to search for questionable data
  - Accuracy and comprehensiveness of data are responsibility of those who supply the data
  - Re-reviewing data already edited by supplier
- Audit the data
  - Give a prescribed statement of actuarial opinion on data review

(c) Follow ASOP 23 and ASOP 41

Use professional judgment to conclude if data is sufficient and reliable

Should disclose the following

- Data source
- Whether or not the data has been reviewed
  - Process followed to review the data
  - Whether review considered other data (prior year data)
- Reliance on the data provided by others
- Material defects with data
- Adjustments or assumptions made by the actuary
  - Rationale for adjustments
- Limitations due to uncertainty of the data
- Any unresolved concerns
- Results that are highly uncertain or have a potential bias
  - Nature of such uncertainty or bias
  - Magnitude of such uncertainty or bias
- Conflicts that arose from complying with law, regulation or binding authority
- Justify deviations from ASOPs

1. Continued

Other possible disclosures
- Description or summary of data
- Census date

2. Learning Objective:

1. The candidate will be able to analyze different types of registered/qualified defined benefit and defined contribution plans, as well as retiree health plans
    a. Describe the structure of the following plans
       Hybrid plan designs such as cash balance
    b. Describe the process and apply the principles of conversions from one plan type to another
    d. Given a plan type, explain the relevance and range of plan features

2. The candidate will understand how the regulatory environment affects plan design and understand how to apply relevant restrictions
    b. Explain and apply restrictions on plan design features to a proposed plan design
    f. Explain and apply rules governing the conversion from one type of plan to another.

Commentary from Graders:
Contained in the following solution.

Question:

National Oil Company's (NOCs) CFO is concerned about the long term cost of the Salaried Pension Plan. At the same time, NOC's management is concerned about the benefit adequacy for mid-career employees. In order to address these concerns, NOC's management is interested in converting to a cash balance plan.

(a) Propose a cash balance plan design for NOC, emphasizing the key features that distinguish the cash balance plan from the current Salaried Pension Plan. Provide support for your proposed design.

Solution:

We propose the following cash balance plan design:

Age	Pay Credit (as a percent of pay)
< 30	3%
31 – 39	4%
40 – 49	5%
50 – 59	6%
60+	7%

The interest crediting rate would be equal to the average of the 30-year Treasury rate for the months of September, October, and November of the preceding year.

Participants would retain the same forms of payment as under the current final average pay (FAP) plan (lump sum, life annuity, joint & survivor options, etc.)

2. Continued

Note: In the above section we were looking for a description of pay credits, interest credits, and distribution options.

Support for proposed design

- Because this formula is less generous than the current FAP, it will lower long-term cost of the plan
- It offers no early retirement subsidy like the current FAP formula
- However, this could result in workforce issues
  - Delayed retirement for employees who do not have enough of a benefit to be able to retire
  - May hinder promotion and other opportunities for other employees
- Accrual rate is based on age which helps to provide larger accruals later in employee's career similar to the FAP formula
  - It could also be based on service or both age and service
  - Increasing accruals as age increase could help attract and retain mid-career hires
  - Also could help retain current employees
- Portability of the cash balance benefit is attractive to employees
- Early accrual of benefits (as compared to the FAP) is attractive to employees
- Lump sum value of cash balance benefit is easier for employees to understand than the value of a lifetime annuity

Key features that distinguish the cash balance formula from the current plan

- Benefit determination – FAP is based on average pay in final years of career; cash balance is based on earnings in every year of career (final average pay vs. career average earnings)
- Benefit accrual
  - FAP favors older and longer service employees
  - Proposed cash balance plan is more age-neutral
  - Proposed plan favors new employees and mid-career hires (reduces early termination penalties present in the FAP)
- Distribution options – Can be similar in both designs – lump sum, annuity, joint & survivor, etc.
- Hypothetical cash balance accounts are much easier to communicate to employees
  - They are credited with interest which helps protect the employees from inflation after termination
    - Crediting rate can be fixed, variable, tied to indices, etc.

2. Continued

Question:

(b) Describe the different transition approaches NOC could use in converting the Salaried Pension Plan

Solution:

1. Allow employees to choose between the current plan and the new plan
2. Allow employees whose benefit would be adversely affected by the conversion to stay in the current plan
3. Make an adjustment to initial account balances (or provide transition credits or benefits) of the new plan for adversely affected participants
4. Make additional contributions to other plans sponsored by NOC (such as a DC plan) and in which adversely affected employees are participating
5. Let employees at least age x and/or with service of at least y years stay in the current plan
6. Convert the accrued benefit to an opening balance in the cash balance plan
    a. Using the plan's current lump sum rates
    b. Using a lower rate to lessen reduction in future benefit accruals
7. Create an opening balance as if the employee had always participated in the cash balance plan
8. Freeze final average pay benefit and accrue future benefits in the cash balance plan only

Note: These were generally from a list in the Allen reading. Description of the PPA-mandated A+B condition was given credit in point 8.

Question:

(c) Recommend a transition plan for the current Salaried Pension Plan members. Provide support for your recommendation.

Solution:

Note: Many other possible recommendations could receive full credit. This is only one possible solution. The successful candidate chose a transition plan and supported it.

Freeze the final average pay benefit and begin accruing future benefits in the cash balance plan. However, as a transition, provide for the continued accrual of benefits in the old plan for the next five years if it would produce a greater accrued benefit. In this way, employees close to retirement will be protected from losing benefits for a period of time and NOC will be able to use the new design to attract new employees.

Another advantage to this approach is that it will result in no wear-away of benefits for any employees.

In addition, NOC should provide extensive communication and education to all affected employees so that they fully understand:

2. Continued

1. The company's reasons for making the change
2. How the change affects them

3. Learning Objective:

1. Analyze Defined Contribution Plans
   a. Describe the Structure
      i. Defined Contribution Plans
      ii. Individual Tax-favored savings plans

Source: McGill, Chapter 13

Commentary from Graders:
This is a question asking for a detailed summary contrasting traditional and Roth IRAs. A good candidate paper not only summarized the features of each plan, but would also contrast the differences and demonstrate the usefulness of each type of IRA for individuals.

Question:
Compare and contrast Traditional and Roth IRAs.

Solution:

Features on both Traditional and Roth IRAs:

- Both are retirement savings vehicles available to individuals
- Both allow rollovers from other retirement plans and do not count against the annual contribution limits
- Both permit transfers to survivors

Features of Traditional IRAs:

- Contributions are made with pre-tax income
- Investment earnings are tax-free
- Disbursements are taxed
- Annual contributions amounts are limited to the lesser of an indexed dollar amount and annual compensation
- Contributions are not tax-deductible if the individual is a participant in a qualified retirement plan and has income over a specified limit
- Distributions are not allowed prior to age 59.5 without penalty (except in certain cases – death, disability, etc.)
- Distributions must begin by age 70.5

Features of Roth IRAs:

- Contributions are made with post-tax income
- Investment earnings are tax-free
- Distributions are tax-free
- Individuals over a certain income limit may not contribute to a Roth IRA
- Nonqualified distributions are immediately taxed and also have a 10% excise tax
- No mandatory distributions

4. **Learning Objective:**
The candidate will understand alternative plan types that occur internationally.

Source: Turner and Wattanbe Chapter 2

Commentary from Graders:
A well prepared candidate will be able to discuss the fundamental questions in structuring pension financing, and how the range of approaches adopted by different countries are important to the overall structure of pension arrangements that must be addressed in designing new pension systems internationally.

Candidates were required to describe the basic financing issues in structuring international retirement plans. Credit was given for any comment on how the structure of the retirement program would be impacted by: the international governmental programs, governmental requirements, who should bear the risk, who should bear the cost, how to fund, and types of institutions or plans that are allowed under the international countries regulatory systems.

Question:

You are the actuary for a global company that would like to establish retirement programs for all of its employees. Describe the fundamental issues in structuring international retirement arrangements.

Solution:

The extent of privatization of retirement income

- Measure of privatization: % of retirement income provided through private sector
- Role varies depending on how generous are SS Benefits

Government requirements voluntary or mandatory

- If voluntary, minimum standards are needed (e.g. minimum participation, minimum funding)

If voluntary, does government encourage or just allow them?

- Does government provide subsidies or preferential tax treatment
- Government may offer nothing and treat as regular savings plan

Who is best able to bear financial risk (Employer vs. Employee)?

- Primary decision should involve whether plan is DB (Employer risk), DC (Employee risk) or hybrid

Does government have mandatory insurance for pension benefits?

- PBGC for example in the US
- Added expanse for employers
- Provides protection if plan terminates without full funding or sponsor becomes bankrupt

4. Continued

- Covers risk of financial malfeasance by sponsor

Should Employee or Employer or both pay for plan?

- In a contributory DB plan, should Employee contribution be mandatory or voluntary?
- In a DC plan with an Employer match, should there be a minimum contribution level or eligibility for the Employer match?

Should benefits be funded in advance?
- Most countries required some form of advance funding.
- Not funding in advance may help you to avoid market risk.

To what extent should pension investment portfolios be regulated?

Why types of organizations are allowed to sponsor plans?

Are individual plans allowed?
- Workers can receive pensions not tied to a particular Employer in some countries.

What types of institutions are allowed to manage pension funds?
- Banks only, Insurance Companies only, both neither, internal management allowed?

5. **Learning Objective:**

Analyze/synthesize the factors that go into selection of actuarial assumptions for post-retirement medical plans.

(a) Understand the various assumptions required for a valuation
(b) Evaluate appropriateness of current assumptions given the purpose
(c) Describe and apply the building of economic assumptions

Source:

Yamamoto Ch 9 pp 252-278 B
SOA Long Term Healthcare Trends Resource Model, Practical Issues for Actuaries
You are the actuary for a company that sponsors a retiree health benefit program.

Commentary from Graders:

(a) This question tests the candidate's understanding of the roles assumptions play in a post-retirement medical plan and the care in their selection. A well prepared candidate will not only identify the relevant economic assumptions utilized in a retiree medical valuation but also their uses and the considerations in their selection.

(b) This question requires the candidate to apply the theoretical knowledge from part (a) to a real situation. A well prepared candidate would provide concrete opinions on the proposed trend rate, the inappropriateness of the client's basis for its selection and suggest appropriate model for the selection of a trend rate.

Question:

You are the actuary for a company that sponsors a retiree health benefit program.
(a) Describe the economic assumptions for retiree medical valuations and unique considerations for their selection.

Solution:

Discount Rate
Interest assumption used to discount future payments
Consist of inflations plus real rate of return / building block approach
Cash flow match of current high quality fixed income securities
Will differ from pension plan due to difference in cash flow
Should use after-tax rate of return on assets if plan is funded

Inflation
Base for all economic assumptions
Use CPI or other index

Salary Scale
- only if contributory or life insurance tied to salary

5. Continued

Plan Costs
projection of current cost of the retiree medical plan
Consider effects of aging
significantly impacted by plan design components:
> covered benefits
> deductible
> co pay
> retiree contributions
> out-of-pocket maximums
> integration with government provided health cover or medicare/medicaid coverage
may develop costs for some benefits separately

Claims Cost (Data for Analysis)
Usually developed from claims paid during a given period
should develop cost active vs. pre-65 retirees vs. post-65 retirees separately
Missing data is often significant / databases may be unreliable / credibility of claims data
claims cost developed per capita
need to develop assumption of coverage election rate

Health Care Cost Trend Rate
Rate used to project current plan costs into future years
may vary short versus long term (select and ultimate effects)
may begin at current levels and trend down
long term rate often developed as inflation plus a real rate
Tied to GDP
Tied to provincial health coverage or medicare/medicaid coverage
consider health care inflation
consider advancements in technology
consider plan design effects / leveraging
consider cost shifting / retiree contribution rate change
consider utilization
consider usage mix of different health care services
may apply different trend rate to different services
consider sustainability of the trend in relation to the total economy. Cannot exceed 100% of GDP

All assumptions should be internally consistent
Assumptions should be developed in accordance with ASOP/CSOP

5. **Continued**

Question:

(b) Your client performed an internal study of active and retiree medical claim experience and concluded its costs have increased on average 3.5% per year for the past five years. The client suggests that a flat 3.5% per year would suffice as a Long-Term Health Care Trend Rate, as it reflects their experience and the fact that their employees tend to be healthier than average. Critique this suggestion, proving support for your opinion.

Solution:

3.5% trend rate is too low
Use of select and ultimate rates is common
Typically rates start high and trends lower
Higher for first 5 years is common
Consider relationship of Short Term Rates versus Projected Long Term Rates - must have consistent basis

Plan experience not a significant factor in Long-Term HCCTR
short rate consider plan experience
long rate driven by economy
constrained by GDP

Develop rate using SOA model (Getzen model) with following components
Rate of inflation
Rate of growth in real income/GDP per capita
Income multiplier for health spending
Extra trend due to technology and other factors
Health share of GDP resistance point
Year for limiting cost growth to GDP growth
Unique considerations of plan requiring changes to the typical pricing model
> legal constraints on future changes to the plan
> may require future health care costs be modeled without constraint limits
> regional legislative changes could impact future costs

6. Learning Objective:

Asset liability modeling/Liability driven investments

Source: RD120-07: Asset Liability Modeling & asset allocation for pension plans (Wendt)
Liability Driven Investment Strategies
Top 10 Myths about Liability Driven Investing

Commentary from Graders:
In this question, candidates were asked to demonstrate their understanding of LDI strategies and why a plan sponsor may want to use one and also to explain the differences between an asset only space versus an asset-liability space analysis. The CFO's concern was typical and a well-prepared candidate would have been able to address the concerns by showing the advantages of using LDI.

Question:

Your client's CFO returns from a meeting of pension plan sponsors where the topic of Liability Driven Investments (LDI) was discussed. Although interested, he does not believe that it would be an appropriate strategy for NOC's pension plan. The CFO is concerned both about sacrificing potential upside investment returns and timing due to the current low interest rate environment.

Solution:

(a) Explain why the use of an LDI strategy might be appropriate for a plan sponsor.

- Protect downside risk of plan funded status
- Minimize volatility of contribution requirements
- Stabilize pension expense on income statement
- Reduce balance sheet volatility
- Pension plan exists to provide benefits, so assets' performance should be measured against liabilities
- LDI strategies address duration mismatch between liabilities and assets moves
- LDI employs investment strategies that extend duration of portfolio

(b) Compare and contrast efficient frontiers in asset-liability space versus asset-only space

Efficient frontier – graphical presentation of risk/reward trade-off, portfolios with minimum risk for given reward
Equivalently minimum risk for maximum reward

Optimization for investment portfolios depends on definition of risk-reward
Traditional (asset only space, aka Markowitz) efficient frontier uses expected nominal asset return and standard deviation of return as risk
Typically single period frontier
Typically uses quadratic optimizer with linear constraints and utilizes asset only perspective

6. **Continued**

LDI efficient frontier in asset-liability space optimizes specific asset-liability measures (e.g. funded status versus standard deviation of funded status)
And different measures of risk: downside variance or probability of shortfall (against threshold) or worst most outcome (VAR concept)
Asset-liability space frontier often multi-period
Tool well suited for ALM & LDI modeling as liabilities are incorporated
Picture of sample frontier – either one

(c) Prepare a response to the CFO's concerns.

CFO's first concern is about sacrificing potential upside investment returns, as he may be mistakenly believing that LDI requires an increased allocation to fixed income
LDI strategy to increase duration of bond portion of portfolio without disturbing equity portion, does not give up equity potential upside
Should look at assets/liabilities together: what might be bad for assets may be good for liabilities
Such as: change in inflation if plan is indexed, or
Different duration between assets & liabilities
Other basic LDI strategy utilizes derivatives' overlays,
Such as interest rate swap overlays, or future or forward contracts, or options strategies
Advantages of derivative overlays that existing portfolio structure may remain untouched
Another advantage that very long durations (not available with physical "long" assets) can be achieved
Disadvantages: plan needs sufficient liquidity to fund initial and variations margin requirements, and may introduce other sources or risks: counterparty, liquidity, valuation, tracking, etc.

Another strategy to re-allocate some equity into long duration bonds can be accompanied with alpha-producing investment to ensure the same targeted level of expected return
CFO should consider changing his view of "upside" from asset only perspective to asset liability perspective – in context of funded status risk implications
Need to recognize that attempting time implementation of interest rate hedging program is no different than placing "active bets"

Even if expecting interest rates to rise, one should recognize the risks taken & talk to their boards
Solution may be to implement LDI strategies on delayed or gradual basis

7. Learning Objective:

1. The candidate will be able to analyze different types of registered/qualified defined benefit and defined contribution plans as well as retiree health plans
   - (a) Describe the structure of the following plans: Fixed dollars and pay-related defined benefit plans, hybrid plan design, defined contribution plan
   - (b) Given a plan type, explain the relevance and range of plan features including the following: plan eligibility requirements, benefit eligibility requirements, benefit / contribution formula, payment options, ancillary benefits, benefit subsidies

Discuss common multiemployer plan benefits and designs and explain how the different plan designs can help mitigate future financial difficulty.

Explain how multi-employer pension plan designs and features can help mitigate future financial difficulty.

Commentary from Graders:
A well-prepared candidate would have:

- described design features of multi-employer plans
- addressed issues of cost containment in describing multi-employer plan design features
- discussed alternate plan designs (defined contribution, hybrid/cash balance) in addition to traditional multi-employer plan designs
- considered how membership demographics affect plan design features from a cost perspective

Question:

Explain how multiemployer pension plan designs and features can help mitigate future financial difficulty.

Solution:
Multi-employer plan

- basic idea
  - several employers and union get together to negotiate contribution rate
  - actuary comes in and designs a benefit that can be sustained by contribution rate
  - as benefit levels and funding status increase, contribution rates increase
- basic formula
  - most common formula is flat dollar amount per year of service
  - flat dollar amount increases based on funded status of the plan / union negotiations
  - less common formula is percentage of pay per year of service
- design considerations
  - early retirement (ER) benefits
    - most offer ER subsidies
    - can be fully subsidized, partially subsidized or actuarially reduced

7. **Continued**

        - most plans allow different sets of early retirement factors depending on age and service
    - late retirement
        - most plans defer receipt of benefit while working past normal retirement age
        - with worker shortage that is being reconsidered
    - death benefits
        - most plans offer better-than-minimum qualified joint and survivor annuity
    - disability benefits
        - most plans require eligibility (55 & 10, for instance)
        - must have proof of disability from social security
        - can commence benefit unreduced in most places
    - forms of benefit
        - lump sums are generally not allowed
            - employer wants the employee to have a benefit at retirement so lump sums are sometimes taken and spent before retirement
        - some plans allow for a pop-up benefit
            - when joint annuitant dies, the participant's benefit increases
        - most allow for payment of a 13th cheque during the year
    - year of credited service
        - a year of service is credited when an employee worked between 800 and 1,800 hours in a year
        - extra hours worked in one year can be rolled over to the next year because of hours volatility
    - vesting
        - same as single employer plans
            - 5-year cliff or 7-year graded vesting are statutory minimums
            - cliff vesting most common
    - other benefits
        - most plans allow for COLAs
- if plan is in deficit, employer needs to put in money in addition to employer contribution rate
    - or can increase contribution rate but not benefits
- other ways to mitigate financial difficulty
    - strict eligibility
    - don't give ER subsidies that are too generous
    - no lump sum option (delays needing benefit payouts right now)
    - use flat dollar benefit for better predictability

8. **Learning Objective:**
The candidate will be able to analyze the relationship of plan investments with plan design and valuations.

Source: R-D133-09 Maginn and Tuttle Chapter 8, Section 6 – Hedge Funds B

Commentary from Graders:
This is a question requiring candidates to explain four types of hedge fund investment strategies, and then explain the distinguishing features of hedge fund indices.

In part (a), candidates were required to explain the general strategy and give supporting information showcasing their understanding of the intricacies of each strategy, such as an example, where the arbitrage would come from, etc… Credit was given for points accurately explaining the strategies based on the descriptions in the source material.

In part (b), candidates were required to explain the distinguishing features of hedge fund indices. The source material listed both general features and provided detail on how the indices were constructed. Credit was given for points accurately listing the general features and giving descriptions of how the hedge fund indices could be constructed, as based on the source material.

A well-prepared candidate could accurately explain the four hedge fund investment strategies in general and then provide further detail on each strategy. A poorer candidate tended to give a description based on the words in the strategy name. For part (b), a well-prepared candidate could provide both the general features and then provide further detail on how the different indices could be constructed. The poorer candidates tended to explain the different features of hedge funds or the hedge fund strategies, rather than the hedge fund indices. Also, many candidates who did poorly on section (b) gave a lot of irrelevant information on biases related to hedge funds or certain ratios that measure hedge funds.

Question:
The question had two parts:
(a) Describe the following types of hedge fund investment strategies:
- (i) Equity Market Neutral
- (ii) Convertible Arbitrage
- (iii) Distressed Securities
- (iv) Global Macro

(b) Describe the features which distinguish the different types of hedge fund indices.

Solution:

(a) **Equity Market Neutral Strategy:** Identify overvalued and undervalued equities while simultaneously neutralizing the portfolio's exposure to market risk by combining both short and long positions. These portfolios tend to be focused

8. Continued

either on market, industry, sector, or dollar neutral positions. The strategy is accomplished by holding long and short equity positions with almost equal exposure to the related sector or market factors.

The perceived market opportunity (arbitrage) comes from (1) the portfolio's flexibility to take both long and short positions (without regard to the securities' weights in a benchmark) and (2) the existence of overvalued securities in equity markets ("pockets of inefficiencies").

Convertible Arbitrage Strategy: Managers try to take advantage of anomalies in the prices of corporate convertible securities. The managers would buy or sell these convertible securities and hedge a portion or the entirety of the associated risks. For example, a manager would buy a convertible bond (which can convert to a stock) and then short the associated stock to hedge the equity component of the bond's risk. The risks of this strategy are price changes in the underlying stock and changes in expected volatility of the stock. This strategy makes money if the expected volatility of the underlying asset increases.

Distressed Securities Strategy: The strategy involves investing in both the debt and equity of companies that are in or near bankruptcy. Traditional investors prefer to avoid the risks of companies in danger of default. Also, since distressed debt and equity are relatively illiquid, most hedge funds using this strategy take long positions.

Global Macro Strategy: The strategy attempts to exploit systematic moves in major financial and non-financial markets by trading in currencies, futures, and option contracts. The strategy differs from the traditional hedge fund strategies since it concentrates on major market trends instead of individual security opportunities. Many managers using this strategy also use derivatives (such as futures and options).

(b) There are several general distinguishing features of hedge fund indices:

- If they report a monthly or daily series
- If they are investable or non-investable
- If they list the actual funds used to construct the benchmark

Also, hedge fund indices differ by how they are constructed. The main differences are their selection criteria, their style classification, their weighting scheme, their rebalancing scheme, and their investability.

For selection criteria, indices will differ based on their decision rules to determine which hedge funds are included in the index.

For style classification, different indices have various approaches to determine how each hedge fund is assigned to a style-specific index and to determine if that

8. Continued

fund matches the style classification methodology or should be excluded from that style-specific index.

For the weighting scheme, indices have different schemes to determine the weighting of an individual fund's return to the entire index. For the rebalancing scheme, indices have different rebalancing rules to determine when the assets are reallocated among the different funds in an equally weighted index.

Lastly, indices may be directly or only indirectly investable.

9. Learning Objective:

The candidate will be able to analyze plans designed for executives or the highly paid.

Source: Allen – Chapter #14

Commentary from Graders:

A well prepared candidate should have recognized that there is no legal requirement to fund a plan and that funding such a plan could have adverse ramifications under ERISA. He/she should have also identified any financial reporting issues as well as the potential taxation issues.

The well prepared candidate should have identified the three major funding mechanisms available such as secular trusts, rabbi trusts, and corporate owned life insurance. A knowledgeable candidate would have been able to identify the benefit security and taxation issues associated with each vehicle.

1. Adequately describe and explain the advantages and disadvantages a sponsor should consider in making the decision to pre-fund a non-qualified executive benefit plan.

2. Identify the major areas that could be affected by the decision such as benefit security, legal requirements, taxation issues, and financial statement effects.

3. Compare and contrast the available vehicles to pre-fund a non-qualified plan including the advantages and disadvantages of each vehicle.

Question:

(a) Describe the considerations in funding the SERP.
(b) Describe the SERP funding vehicles available.

Solution:

There is no requirement under ERISA to pre-fund a non-qualified executive benefit plan, and usually such benefits are not funded. There are a number of issues the sponsor of such a plan should consider prior to prefunding the plan:

Benefit Security Issues:

- In unfunded plans the security of an executive's benefit is tied to the employer's solvency.
- Prefunding the plan enhances the benefit security for the executive.

Cash-Flow Issues:

- Pre-funding a plan provides for a more stable and budgetable pattern of cash flows from the plan and reduces liquidity risk.
- The sponsor needs to determine if there are better uses for the money that would be used to pre-fund the plan such as investing in other areas of the business.

9. Continued

Regulatory & Administrative Issues:

- Once a plan is pre-funded it may need to meet the vesting, reporting, discrimination, and reporting issues under ERISA Title I.

- In addition, the sponsor must maintain a minimum funding percentage of any qualified plans in order to pre-fund a non-qualified executive plan.
- The Department of Labor will make its determination as to whether a plan is funded based on a facts and circumstances test.
- Prefunding the plan makes it more complicated to administer and communicate to participants.

Accounting Issues

- Depending on the prefunding vehicle chosen, any assets set aside may be reflected in the sponsor's balance sheet and income statement.
- Assets set in aside in a Secular trust can be recognized whereas assets set aside in a Rabbi Trust or Life Insurance Policies may not be recognized.

Taxation Issues

- Need to be aware of a constructive receipt issues that apply and be aware of the doctrine of economic benefit. If the participants can elect to receive income at any time elects to defer it, they shall be taxed as if they have received the money.
- Any funds set aside must have significant risk of forfeiture or they will taxed as being received immediately.

B. There are three primary vehicles available for prefunding a non-qualified executive benefit plan:

Rabbi Trust

- An irrevocable trust is set up for the benefit of a select group of participants.
- The terms of the trust limit the use of the assets to the benefit of the participants they cannot be used by management. This prevents corporate raiders from taking over the firm and using the funds that were set aside for their own purposes.
- Assets are available to creditors however in the event of bankruptcy. Since there is significant risk of forfeiture there are no constructive receipt issues.

Secular Trust

- Funds are set aside on an irrevocable basis into a Trust.
- These funds are for the exclusive benefit of the participants and cannot be seized by creditors in the result of a bankruptcy. This is the ultimate level of protection for the participants.

9. **Continued**

- Since there is no risk of forfeiture, the benefits are taxed due to the issue of constructive receipt.

Corporate Owned Life Insurance (COLI)

- The corporation takes out a life insurance policy and is the owner and beneficiary of this policy
- The accumulated cash values or death benefits can be used to pay benefits
- Since the employer is the owner and beneficiary of the policy, there is limited benefit security offered to the participants
- Can create a communication issue, as the company must notify employees prior to purchasing life insurance on their behalf.