



Controlling Employer Contribution Volatility

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Structure of Defined Benefit Plans

- Benefit is based on a fixed formula
 - Benefit formula usually related to service and/or salary
- Investment risk is borne by employer
 - Members do not benefit when investment performance of the pension fund is good
 - Members do not bear the investment risk of a down market
- Goal of funding policy is to fund benefits over the working lifetime of members so that at retirement there are sufficient funds to pay lifetime benefits

Retirement Funding Equation

$$C + I = B + E$$

- B depends on:
 - Plan provisions
 - Experience
- C depends on:
 - Short term: actuarial assumptions
actuarial cost method
 - Long term: I, B, E

C = Contributions (employer and employee)

I = Investment income

B = Benefits

E = Expenses

Sources of Funding

- Employee contributions
- Employer contributions
- Investment income

Employer Contributions

- Employer normal cost – amount needed from employers to fund the benefits earned by the active members for the current year
- Accrued liability – amount needed to fund the unfunded accrued liability

Common Funding Methods

- Entry age normal
 - Most common in public sector
 - Project benefit to retirement and allocate over period from age of hire to expected age at retirement
 - Cost as a percent of pay tends to be stable over time
- Projected unit credit
 - Benefit accruals are funded as they accrue each year
 - Costs as a percent of pay will typically increase over time

Smoothing Techniques – Unfunded Accrued Liability

- Amortization period
 - Maximum period permitted by GASB is 30 years
 - Consider intergenerational equity
- Level dollar or level percent of pay
 - Level dollar – payment is the same in each year of amortization period
 - Level percent of pay – payment will increase each year with payroll growth assumption

Smoothing Techniques – Unfunded Accrued Liability

- Open or closed amortization period
 - Closed – remaining amortization period goes down by 1 each year
 - Open – each year amortize the unfunded accrued liability over the same period

Asset Smoothing Techniques – ASOP 44

- Actuarial value of assets (AVA) must bear a reasonable relationship to market value (MV)
- Qualities of asset valuation method
 - Asset method is likely to produce AVA's that are sometimes greater than and sometimes less than the corresponding MV
 - Asset values must fall within a reasonable range around MV
 - Any difference between AVA and MV must be recognized within a reasonable period of time

Asset Smoothing Techniques – Actuarial Value of Assets

- Most Common
 - Each year take the difference between actual and assumed return on market value
 - Difference is spread (usually) over 5 years
- Other Variations

Asset Smoothing Period

- Most common is 5 years
- Possible reasons for increasing smoothing period
 - Longer business/economic cycles
 - Greater market volatility

Other Techniques to Control Employer Contribution Volatility

- Floors and ceilings on employer rate