Role Of Actuary In a DC World

Actuarial Valuation of DC plans

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A DC WORLD

- Individuals are responsible for a major part of their retirement income.
- Individuals bear major risks: investment, mortality, inflation, etc.
- The outcomes of retirement programs are uncertain.

LEGACY RETIREMENT SYSTEMS

- Plan sponsors bear the investment risk.
- The mortality risk is pooled.
- Actuarial organizations responsible for financial reporting.
- The “infrastructure” of actuarial work: education, examinations, ASOPs, practice notes, ethical guidelines, etc.

THE CHALLENGE

- Most plan participants and sponsors have little understanding of their DC plan outcomes.

- To provide the stakeholders of DC plans reliable information regarding the outcomes of these plans.

- To develop a new *valuation* framework for DC plans.

AREAS OF EXPERTISE REQUIRED

- Demographic: rates of mortality, retirement, disability, turnover.
- Economic: rates of consumer inflation, wage growth, investment returns.
- Plan participant data processing.

The profession that has this expertise: **ACTUARIES**.

MEASUREMENTS OF DC PLAN OUTCOMES

- Replacement Ratios
- Sustainable Spending in Retirement
- Asset Values at Retirement

DB PLAN VALUATION vs. DC PLAN VALUATION

	Benefits	Contributions
DB Plan Valuation	Given	*Calculated*
DC Plan Valuation	*Calculated*	Given

Proposed Valuation

	Results
DB Plan Valuation	Deterministic
DC Plan Valuation	Stochastic

ACTUARIAL ASSUMPTIONS

	Demographic Assumptions	**Economic Assumptions**
DB Plan Valuation	Mortality, disability, turnover, retirement, J&S, etc.	*Discount rates,* inflation
DC Plan Valuation	✓	*Capital markets, policy portfolio (a.k.a. glide path),* inflation

INVESTMENT RETURN ASSUMPTIONS

	Capital Market Assumptions	Policy Portfolio Assumptions	Portfolio Returns
DB Plan Valuation	Expected returns, risks, correlations	Expected portfolio rebalancing	Deterministic
DC Plan Valuation	✓	✓	Stochastic

POLICY PORTFOLIOS

- Most DB plans utilize the stationary policy portfolio assumption: “the-same-portfolio-in-all-years.”
- This assumption is too restrictive and unrealistic, yet it is usually accepted without question.
- Individuals and retirement plans evolve, so they should use evolving policy portfolios (*glide paths*).

SIMULATION-FREE STOCHASTIC VALUATION

- Outcome measurements of DC plans are stochastic.
- Their probability distributions can and should be estimated without Monte-Carlo simulations.
- Given a simulation-free valuation methodology, different actuarial firms would generate the same valuations as long as they use the same assumptions.

TAKEAWAYS

Actuarial valuations of DC plans:

- Similar to DB plan valuations in many ways
- Present significant challenges
- Present tremendous opportunities

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