ACTUARIAL COST METHODS
DESIRABLE CHARACTERISTICS

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1. Level Normal Cost ($, or % PAY)

2. Accrued Liability $\geq$ Present Value of Accrued Benefit

3. Accrued Liability $\geq$ Plan Termination Liability

4. Funding Flexibility for Pension Plan Sponsor

UNIT CREDIT

Benefit Allocation Method, defines Accrued Liability as P.V. of Accrued Benefit:

$$AL = AB_X \, \ddot{a}^{(12)}_{RA} (v^{RA-X} \, {}_{RA-X}p_X)$$
$$= AB_X \, \ddot{a}^{(12)}_{RA} (D_{RA} / D_X)$$

Normal Cost = P.V. of Δ Accrued Benefit

$$NC = (AB_{X+1} - AB_X) \, \ddot{a}^{(12)}_{RA} (v^{RA-X} \, {}_{RA-X}p_X)$$

This is plain vanilla Unit Credit, as on exam!

UNIT CREDIT

Retrospective Accrued Liability definition

$$AL = \sum_{t=EA}^{X-1} NC_t \, (1+i)^{x-t} \, / \, {}_{x-t}p_t$$

(Accumulate NC w/ interest, survivorship)

PART 7I PENSION PROBLEM

Develop a formula to demonstrate the equivalence of the prospective and the retrospective definitions of Accrued Liability under the Unit Credit cost method.

PROSPECTIVE ACCRUED LIABILITY:

PV Future Bens minus PV Future NC

(Homework exercise)