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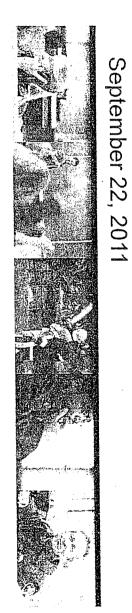


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Presentation to the KPERS Study Commission

The Basics of a Cash Balance Plan Design

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- Combines features of both DB and DC plans
- DC features: value of benefit is expressed during working years as account value
- ➤ DB features:
- Benefit is paid as lifetime income at retirement (lump sum may be optional form of payment)
- Guaranteed interest crediting rate
- Assets are pooled and professionally managed
- assumptions Employer contributions will vary depending on the actual experience compared to actuarial





- Employee contribution rate
- Employer pay credit
- Interest crediting rate
- Guaranteed rate
- Conversion of account value to monthly income Additional credit when experience is good?
- Requires an investment return assumption and a mortality assumption
- Conservatism can be built into the assumptions
- Can provide for prospective changes in assumptions with Board action
- payment Partial/full lump sum can be offered as optional form of







- > Cash balance plans are DB plans that use actuarial assumptions and require an actuarial valuation
- Valuation determines the employer contribution actuarial assumptions expected benefit payments, plan assets and the rate based on census data for current members, Actuarial contribution rate will vary with experience
- Could set a fixed employer contribution rate like Nebraska
- Investment return assumption vs interest crediting employer contribution rate rate and other assumptions will impact the





- Example: Assume an employer pay credit of 5%
- If interest crediting rate is 7% and actuarial assumption is 7%, the employer contribution = 5%
- assumption is 7%, the employer contribution < 5% If interest crediting rate is 5% and actuarial
- As actual return varies from assumed, it is reflected in the actuarial contribution rate
- Actual investment experience will ultimately drive conservatism than with traditional DB plan the cost of the plan, but easier to build in some





Public Sector Cash Walance Plans



- ➤ Nebraska State and County Plans
- Initially DC plans when started (1964 and 1965)
- Converted to Cash Balance Plans in 2003
- > Texas County & District Retirement System
- Established as Cash Balance Plan in 1967
- structure and individual valuations are performed for Each participating employer chooses the benefit each employer
- > Texas Municipal Retirement System
- Established as Cash Balance Plan in 1948
- Each city selects plan design and individual valuations are performed



Typothetical Cash Walance Account Value



YEAR	Beginning Balance	Total Pay Credits	Interest Credit	Ending/Balance
Year 1	0	3,600	108	3,708
Year 2	3,708	3,900	340	7,948
Year 3	7,948	4,000	597	12,545
Year 4	12,545	4,200	879	17,624
Year 5	17,624	4,400	1,189	23,213
Year 6	23,213	4,500	1,528	29,241

Assumes 6% interest credit with monthly crediting.





14,000	14,000	13,000	13,000	10
100,000	93,000	86,000	80,000	15
304,000	267,000	234,000	207,000	25
789,000	650,000	539,000	451,000	35
8%	7%	6%	5%	SOA

All projections assume the member works the designated years, has a starting salary of \$35,000, 8% total pay credit, and annual salary increases of 4%.



Conversion of Cash Balance Account of \$350,000 to Wonthly Income



2,910	2,698	2,490	67
2,788	2,575	2,365	65
2,634	2,418	2,207	62
2,547	2,329	2,117	60
2,376	2,153	1,937	55
7%	6%	.5%	Age at retirement

Mortality Table projected to 2030, 50%/50% male/female blend. All conversions assume an account balance of \$350,000 and use of the RP 2000



Cost Factors of a Cash Balance Plan



➤ Employer Pay Credit

- Higher pay credits will result in higher cost
- Higher vesting requirement lowers cost

Interest Crediting Rate

- A higher expected return than the guaranteed interest crediting rate will lower the employer cost
- Actual costs will depend on actual investment experience
- Can reduce the risk to the plan by setting guaranteed status of the plan permits interest rate low and granting "dividends" if the funded
- If dividends are granted, there is one time increase in the actuarial liability



Cost Factors in a Cash Balance Plan



Basis used to convert the account balance to monthly income (annuity purchase rates)

- Requires both an investment return assumption and mortality assumption
- Can be conservative in setting the investment return assumption (lower than expected return)
- Can be conservative in setting the mortality assumption (project mortality improvements)
- those not yet retired Enable Board to change the assumptions prospectively for
- COLAs are paid for by the member in the form of reduced initial benefit
- Longevity risk is manageable for large groups



Cost Factors in a Cash Balance Pan



- > Full or partial lump sum options reduce the longevity risk for the Plan
- Buy annuities from an insurance company at retirement will eliminate longevity risk
- Usually the Plan can provide higher benefit than the insurance company
- Fiduciary responsibility of selecting an insurance company
- Annuity rates vary with market conditions so similarly situated members could end up with different benefit amounts if they retire at different times
- Difficult for members to anticipate actual monthly income until at retirement