



CASH BALANCE PLAN PRIMER

Cash balance plans:

- Have features of both defined benefit and defined contribution plans.
- Can be designed to be generous, reasonable or inadequate, but will be more costly if the goal is to maintain current benefit levels for career workers.
- Include these key plan terms: pay credits, interest crediting and annuity conversion rules.
- Are funded like any other defined benefit plan, with actuarial calculations, normal costs, discount rates and unfunded liabilities.
- Shift resources from career workers to short-timers, as benefits are calculated on a career-average basis.
- Are not as effective as defined benefit plans at retaining workers, especially after workers achieve vesting.
- Are still untested in how they will fare with mature demographics.
- Require separate disability benefits, which are typically provided via pension plans.
- Can be designed to share risks with workers, but not in a logical, effective manner.
- Require a very careful analysis to accurately compare benefits with traditional pensions.

This primer provides basic information about cash balance plans. While these types of retirement plans have been spreading in the private sector for more than a quarter century, there are only a few cash balance plans operating in the public sector. Still, since this plan design is increasingly being proposed for public employees as a substitute for their traditional defined-benefit pension plans, it is important to understand what these plans are, what they are not, and the various factors that determine the benefit at retirement.

What is a cash balance plan?

Even though cash balance plans combine elements of both traditional defined-benefit and defined-contribution plans such as 401(k) individual account plans, cash balance plans are technically *defined-benefit pension plans* for two fundamental reasons:

1. IRS regulations require that they provide a “definitely determinable” benefit, usually expressed as a monthly annuity.
2. The employer is obligated to “guarantee” participants’ benefits by funding any shortfall in accumulated assets below the accrued liabilities of the plan.

Despite being defined-benefit plans, cash balance plans may look very similar to 401(k)s to workers. Their benefits are expressed as a cash value (not a monthly benefit amount) during their working years. The benefit appears to grow by adding contributions and interest. So, the benefit

accrual looks very much like that of a 401(k) plan. However, the individual accounts are merely theoretical, all assets are managed as a pool, and the funding mechanism that employers use is the same as what is used for defined contribution plans. Cash balance plans can have unfunded liabilities, just like traditional defined benefit pension plans.

How do cash balance plans work?

In a cash balance plan, “notional” or “hypothetical” account balances accrue for each employee, but plan assets are not segregated into individual accounts.¹ Plan sponsors invest the assets of the plan collectively, just like those of any other defined benefit plan. Moreover, the combined value of participant accounts typically won’t equal the total value of plan assets, just as the assets of a traditional pension plan may not always match liabilities.

Notional accounts grow as they are periodically credited with a combination of pay credits (akin to contributions) and an interest credit regularly applied to the entire hypothetical balance. In the few existing public sector cash balance plans and those that are now being proposed, the pay credits are composed of mandatory employee contributions and notional employer pay credits. For example, a plan could provide for a 4 percent employer wage credit and a 6 percent mandatory employee contribution.

There is wide variance in actual and proposed interest credits. They can be at a fixed rate, or at a variable rate that is linked to an index such as the one-year Treasury bill rate or a corporate bond index. Or, they can vary with the actual investment returns of the plan’s assets, typically including minimum floors and maximum ceilings (for example, zero percent to 10 percent). Within the minimum and maximum rates, some type of formula will determine actual credits (such as the greater of zero percent and 75 percent of actual returns or actual returns less 1 or 2 percentage points).

How are contributions determined?

The employer should make annual contributions to the plan to ensure that the plan assets will be sufficient to pay the promised benefits. As part of this process, actuaries must perform “actuarial valuations” in which they estimate the cost of benefits accruing in the current year, as well as the shortfall/excess in plan assets available for benefits that have accrued in the past. This normal cost estimate and amortization of unfunded liabilities step helps create a minimum annual contribution. While periodic statements make it appear as if individual accounts are receiving specific employer wage and interest credit monies, employer contributions are determined by an actuary, just like for any other defined-benefit plan. The accounts are merely theoretical. It should be noted, given the recent controversies stirred up over funding discount rates, a cash balance plan providing a 6 percent interest credit is not necessarily funding on a 6 percent discount rate. Nor is the employer pay credit equal to the employer normal (accrual) cost. Employers will often use the difference between the interest crediting rate and the return assumption to lower their contributions in the short run, by promising workers less than they are

¹ The individual accounts are often referred to as “hypothetical accounts” because they do not reflect actual contributions to an account or actual gains and losses allocable to the account.

anticipating in returns. So, the funding mechanism is not necessarily more conservative. Thus, a cash balance plan with a 5 percent employer pay credit might have an employer normal cost of only 2 percent.

What benefits are provided?

Upon retirement or termination (if distributions are permitted at that time), the IRS requires conversion of the hypothetical account balance into an annuity, the default option. Like traditional defined benefit plans, cash balance plans may distribute benefits as either a partial or full lump sum. In private sector cash balance plans, whole lump-sum distributions appear to be by far the most popular option. This may be because participants perceive their benefit as a simple dollar amount for their entire career. For their own reasons, plan sponsors tend to promote lump sums as well—providing a benefit as one lump sum shifts two key types of risk—market volatility and longevity—from the employer to the employee.

How do benefits compare with those paid by a traditional defined-benefit plan?

The benefits paid at retirement under a cash balance formula are typically less than the benefits paid under a traditional defined benefit plan because they are based on the employee's entire career earnings, including the lowest to highest earning years. Traditional defined benefit plan calculations are based on the employee's final years of service, when the employee's salary is usually at its highest level.

A cash balance plan could provide career employees with benefits that are equivalent to those received in a traditional defined benefit plan, by providing higher notional account balance pay or interest credits, but this would be more expensive because participants who terminate prior to retirement would also be credited with higher account balances. Put another way, cash balance plans typically provide more to young, mobile workers at the expense of career workers. However, it's not clear that this additional value to young, mobile workers is understood or appreciated by the very individuals who would benefit from it. Thus, the effectiveness of using cash balance plans to recruit such workers is unclear.

Proponents of these plans may argue that cash balance plans provide a better benefit for employees who leave employment before retiring. In such cases, employees may receive the amount in their notional account, assuming this is permitted by the terms of the plan, or can typically continue to keep their account balances with the employer and allow the balance to grow. This is a significant difference compared with traditional defined benefit plans, where benefits cease growing once an employee leaves. These post-employment benefit increases raise the costs of providing benefits to short-term employees. For the same cost to the employer, a cash balance plan increases short-term employees' costs and reduces career employees' benefits.

Plan design features

Comparisons with traditional defined benefit plans depend on specific design features that are still in flux (see matrix) and vary much more with individual circumstances, such as age of hire and termination dates and age of retirement, and with other plan features, such as subsidized early retirement.

Below is a table with a range of potential key plan design features. Note that due to the newness of cash balance plans in the public sector, there is not a typical “template” of features. The variables include the employee contribution rate, employer wage credits (fixed or escalating), annuity interest rates, and restrictions on benefit form and timing (e.g., lump sum, annuity, at termination, only upon attaining retirement age). (For a comparison of select cash balance and traditional defined benefit plan design features, see Appendix 1.) Employer costs and risks will depend on the plan design as well. For example, the higher the floor on interest credits, the more likely employers will be required to make higher contributions during down markets.

| Type of Plan | Description | Example | Variations | Other Considerations |
|--|---|--|---|--|
| Traditional Pension: Defined Benefit Plan, Final Average Pay (FAP) | Benefit based upon % of FAP | 2% X Years of Service X FAP. After 30 years, one would receive 60% of FAP. | Multiplier varies, and can vary by years of service. Can limit pensionable pay, benefit amount or % of FAP. | Easy for workers to understand what benefit means regarding retirement security, but the value of that benefit is less clear. Often includes COLA adjustments and spouse benefit (after retiree dies). Can offer lump sums. |
| Cash Balance Plan | Benefit based on <i>hypothetical account balance</i> , which is converted to an annuity at retirement, can often be taken as lump sum. Funds are managed by retirement plan. | Accounts increase with pay and interest credits: for instance, pay credit could be 9% of pay; interest may be equal to 6%. | Pay and interest credits, and annuity conversion rules, vary. | The value of the benefit is clear, but it is difficult for workers to understand what a particular lump sum would mean in regard to an annual or monthly benefit. If the benefit is cashed out, one risks out-living one’s savings. A cash balance plan can be designed to be adequate or can leave seniors in poverty. Conversion to annuity typically includes charge for COLA (if available at all) and/or spouse coverage at full cost. |
| Defined Contribution Plan | Individual savings account is created for employee, consisting of contributions (employee and employer) and actual investment returns achieved by | 6% of pay is contributed to an account (typically 50-100% from worker), plus actual investment returns. | Employees typically set their own contribution levels, if they participate at all. Employers can change their contribution rate at will (unless it is | The dollar value of the account is clear to workers, but participants have a difficult time understanding whether a certain dollar value will provide a secure retirement. Workers also struggle with other decisions like investment strategies and appropriate contribution levels (employers typically do not offer much advice, for fear of litigation). Defined contribution plans have a poor track record on economic |

| Type of Plan | Description | Example | Variations | Other Considerations |
|--------------|------------------------------|---------|---------------------------|---|
| | worker's investing strategy. | | protected by a contract). | efficiency (higher costs, lower returns, short investment horizons when accounts have most funds) and have failed to provide retirement security. Investment fees paid for by workers. These plans have not been transparent in the past. |

Plan design and relative risk

It is important to note that different retirement plan designs apportion risks and rewards differently between employers and employees, and also among different groups of employees. In defined benefit plans, employers have most of the investment risk exposure (in this context, "risk" could be actual returns on investments that are worse than expected returns), while participants bear no direct investment risk. On the other hand, in a defined contribution plan, employers bear no risk after making a contribution (or match) into an employee account, while employees bear the entire investment risk, for good or ill.

With cash balance plans, relative risks depend on the level of interest credits provided in the plan and the extent to which they vary with investment returns. Since they are still defined benefit plans, the employer is responsible for making up for shortfalls (or can benefit from outsized gains), but a plan with variable interest credits "shares" some of the investment performance risks with participants. Moreover, if a cash balance plan is designed to be less expensive and thus to provide for lower benefits than does the existing defined benefit plan, participants can end up bearing the risk of getting a less adequate retirement benefit than they would have earned under the same employer's traditional defined benefit plan.

Other types of risk that are borne differently are longevity and timing risks. Any plan that provides a lump sum to participants completely shifts the longevity risk to participants. While living longer wouldn't seem to be a bad thing, lump-sum payouts (common in both cash balance and defined contribution plans) expose participants to the possibility of outliving their retirement savings, unless they purchase annuities, which can be quite expensive and can be provided much more efficiently by a pooled fund like a defined benefit plan. Timing risk relates to the potential for varying interest rates and account balances at only slightly differing retirement dates; participants with very similar work histories could end up with materially different benefits and/or lump sums depending on the precise timing of their retirement. Defined benefit plans, on the other hand, pool the longevity and timing risks for all participants; by their very nature, they offer predictable lifelong retirement benefit payments without subjecting any individual to these risks.

Other features that are highlighted by advocates and opponents of the three main types of retirement plans should be considered. Moreover, a disadvantage to one observer may be a positive to another. These include administrative and investment management costs, the employee groups benefit the most, and the effectiveness in attracting and retaining employees. For example, advocates of cash balance and defined contribution plans applaud the fact that these types of plans provide relatively higher benefits to shorter-term employees and don't help retain

employees over a longer career. However, advocates of career public service base some of their most powerful arguments against such plans on their inability to provide an adequate retirement for career employees for the same cost to the employer, compared with a traditional defined benefit plan.

Further, traditional defined benefit plans provide employers with orderly turnover in retirement behavior. Predictable benefits lead to predictable behavior. Thus, defined benefit plans tend to transition workers out of the workforce in a consistent fashion, regardless of economic trends. Plans that provide unpredictable benefits, such as defined contribution plans and many cash balance designs, can lead to workers sticking around longer during recessions (until investment markets rebound) or leaving early as their account balances grow and more job opportunities come available during boom markets. Thus, employers have less control over retirement behavior and are left dealing with more surprises.

Recent public sector cash balance legislation

As previously noted, there are significant differences among recently proposed legislation creating new cash balance plans. It is beyond the scope of this document to analyze all of them. One proposal that was enacted has already been declared unconstitutional (Louisiana) and another might be superseded by a governor who has changed his mind and wants to replace the existing defined benefit plan with a defined contribution plan (Kansas). Whatever the fate of these two proposals, they are fairly typical examples of proposals in other states, which may be more or less driven by ideological or fiscal motivations.

The features of the Kansas cash balance plan include a guaranteed 5.25 percent interest rate, a 6 percent employee contribution, and 3 to 6 percent employer contribution rate based on years of service.

The Louisiana cash balance plan includes an 8 percent employee contribution, a 4 percent employer contribution, and an annual interest credit that is equal to the plan's actuarial return less 1 percent—with a floor of zero.

Proposals of varying specificity and with different features have emerged in other states, including Arizona, Illinois, Kentucky, Montana and Pennsylvania.

Cash balance winners and losers

One of the ways in which cash balance plans are like defined contribution plans relates to the monumental task of calculating the differences in potential benefits for participants, compared with those under a traditional defined benefit plan. Basically, these calculations must include a mind-boggling number of permutations (such as starting age, termination age, retirement age, interest rates and longevity) that will produce diverging results depending on a number of factors, but particularly on the initial and ending dates of participation (early leavers may or may not be able to "cash out" their benefits upon termination, depending on the terms of the plan).

In response to one proposal, the Kentucky Public Pension Coalition evaluated the potential winners and losers by comparing the projected benefit that would be provided under the current

defined benefit plan versus the projected benefit under the cash balance plan. As the table below shows, the proposed cash balance plan would result in benefit cuts for longer-career employees.

Benefit Improvement/(Cut) Under Proposed Cash Balance Plan

| KERS- Non Haz'd | Retirement Age | Hire Age | | | | | | |
|-----------------------|-------------------|----------|---------|---------|---------|---------|---------|---------|
| | | 24 | 29 | 34 | 39 | 44 | 49 | 54 |
| | 60 | (23.9%) | (27.3%) | (27.9%) | (0.1%) | 7.9% | 1.0% | - |
| | 62 | (20.1%) | (23.8%) | (27.6%) | (12.1%) | 0.6% | (5.9%) | - |
| | 65 | (13.3%) | (17.6%) | (21.3%) | (25.8%) | (18.9%) | (12.4%) | (18.0%) |

**Kentucky Public Pension Coalition calculated these figures using plan economic assumptions, current plan benefit provisions for new hires and PEW's proposed plan.*

It is important to bear in mind that this analysis only evaluates the relative impact of the proposed plan on employees who remain employed through retirement (ages 60, 62 and 65) and that the Pew Center on the States claimed that the proposed plan would cost the same amount as the current plan. A comparison of projected benefits for shorter-term midcareer leavers shows a marked tilt toward rewarding such employees, compared with those who spend a career in public service.

In its commentary, the Kentucky Public Pension Coalition noted, "As the chart indicates, an individual hired at the age of 34 and working until age 65 would suffer a loss of retirement benefits of 21.3%." In this particular case, an employee hired at age 44 and retiring at age 60 would actually see a benefit increase of almost 8 percent as a result of early retirement penalties in the existing defined benefit plan. Moving resources away from career workers is a serious policy question, as is sacrificing the ability to retain workers with a traditional retirement plan. In 2007, Mercer actuary Lee Gold produced an analysis that provides an in-depth view of the impact of cash balance versus traditional defined benefit plans on projected benefits, by hire and termination ages. The following table evaluates the impact of a typical private sector cash balance plan compared with a traditional defined benefit plan. The key assumptions used in this analysis are that the traditional defined benefit plan pays 2 percent of final average pay per year of service, and the cash balance plan has a 10 percent annual wage credit and a 5 percent interest credit. The actuary noted that depending on a range of factors, these two plans "may or may not be similar in cost."

How Are Employees Affected? It Depends.

The chart provides a clear illustration of how cash balance plans favor shorter-term employees to the detriment of career participants. For example, a short-term employee who is hired at age 35 and works for 10 years will receive a cash balance benefit at age 65 that is worth 208 percent of what he or she would get under the traditional defined benefit plan. On the other hand, a 25-year-old working a full career in a cash balance plan will end up with benefits that range from 46 percent of a traditional defined benefit plan if he or she retires after 30 years (at age 55), 54 percent of a traditional defined benefit after 35 years (at age 60), 57 percent after 37 years (at age

62), and only 64 percent after 40 years of service (at age 65). This analysis of prototype cash balance and traditional defined benefit plans shows that cash balance plans only produce superior results compared with a traditional final average pay plan for participants who terminate (separate) at least 10 years prior to the normal retirement age of 65.

Annuity Benefit: Ratio of New Plan to Old Plan

Old Plan: Final Average Pay

New Plan: FAP changed to CB

Source: Cash Balance

| Age | Service | Salary | Count | After a Number of Years, Retire at Age 65 | | | | | | At Retirement Age | | | | |
|-----|---------|----------|-------|---|------|------|------|------|------|-------------------|------|-----|-----|-----|
| | | | | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 55 | 60 | 62 | 65 |
| 25 | 0 | \$30,000 | | 610% | 419% | 292% | 208% | 149% | 110% | 83% | 46% | 54% | 57% | 64% |
| 25 | 0 | \$60,000 | | 610% | 419% | 292% | 208% | 149% | 110% | 83% | 46% | 54% | 57% | 64% |
| 25 | 0 | \$90,000 | | 610% | 419% | 292% | 208% | 149% | 110% | 83% | 46% | 54% | 57% | 64% |
| 35 | 0 | \$30,000 | | 293% | 208% | 148% | 109% | 82% | 63% | - | 92% | 53% | 56% | 63% |
| 35 | 0 | \$60,000 | | 293% | 208% | 148% | 109% | 82% | 63% | - | 92% | 53% | 56% | 63% |
| 35 | 0 | \$90,000 | | 293% | 208% | 148% | 109% | 82% | 63% | - | 92% | 53% | 56% | 63% |
| 35 | 10 | \$30,000 | | 150% | 135% | 109% | 87% | 68% | 54% | - | 44% | 48% | 50% | 54% |
| 35 | 10 | \$60,000 | | 150% | 135% | 109% | 87% | 68% | 54% | - | 44% | 48% | 50% | 54% |
| 35 | 10 | \$90,000 | | 150% | 135% | 109% | 87% | 68% | 54% | - | 44% | 48% | 50% | 54% |
| 45 | 0 | \$30,000 | | 145% | 106% | 79% | 60% | - | - | - | 89% | 68% | 64% | 60% |
| 45 | 0 | \$60,000 | | 145% | 106% | 79% | 60% | - | - | - | 89% | 68% | 64% | 60% |
| 45 | 0 | \$90,000 | | 145% | 106% | 79% | 60% | - | - | - | 89% | 68% | 64% | 60% |
| 45 | 10 | \$30,000 | | 102% | 86% | 70% | 56% | - | - | - | 78% | 53% | 53% | 56% |
| 45 | 10 | \$60,000 | | 102% | 86% | 70% | 56% | - | - | - | 78% | 53% | 53% | 56% |
| 45 | 10 | \$90,000 | | 102% | 86% | 70% | 56% | - | - | - | 78% | 53% | 53% | 56% |
| 45 | 20 | \$30,000 | | 93% | 80% | 66% | 54% | - | - | - | 59% | 54% | 53% | 54% |
| 45 | 20 | \$60,000 | | 93% | 80% | 66% | 54% | - | - | - | 59% | 54% | 53% | 54% |
| 45 | 20 | \$90,000 | | 93% | 80% | 66% | 54% | - | - | - | 59% | 54% | 53% | 54% |
| 55 | 0 | \$30,000 | | 74% | 56% | - | - | - | - | - | - | - | - | 56% |
| 55 | 0 | \$60,000 | | 74% | 56% | - | - | - | - | - | - | - | - | 56% |
| 55 | 0 | \$90,000 | | 74% | 56% | - | - | - | - | - | - | - | - | 56% |
| 55 | 10 | \$30,000 | | 81% | 64% | - | - | - | - | - | 100% | 77% | 71% | 64% |
| 55 | 10 | \$60,000 | | 81% | 64% | - | - | - | - | - | 100% | 77% | 71% | 64% |
| 55 | 10 | \$90,000 | | 81% | 64% | - | - | - | - | - | 100% | 77% | 71% | 64% |
| 55 | 20 | \$30,000 | | 82% | 67% | - | - | - | - | - | 100% | 77% | 71% | 67% |
| 55 | 20 | \$60,000 | | 82% | 67% | - | - | - | - | - | 100% | 77% | 71% | 67% |
| 55 | 20 | \$90,000 | | 82% | 67% | - | - | - | - | - | 100% | 77% | 71% | 67% |
| 55 | 30 | \$30,000 | | 83% | 68% | - | - | - | - | - | 100% | 79% | 73% | 68% |
| 55 | 30 | \$60,000 | | 83% | 68% | - | - | - | - | - | 100% | 79% | 73% | 68% |
| 55 | 30 | \$90,000 | | 83% | 68% | - | - | - | - | - | 100% | 79% | 73% | 68% |

Plans, State Association of County Retirement Systems – Educational Symposium 2007, February 6, 2007, Lee M. Gold, Mercer Human Resource Consulting : <http://www.docstoc.com/docs/123518915/Cash-Balance-Plans-State-Association-of-County-Retirement-Systems>

Disability Provisions and Cash Balance Plans

Many public sector employers provide disability benefits through their traditional defined benefit plans. Many cash balance plan proposals overlook this issue, as disability benefits are untenable with cash balance plan accruals.

Typically, a conversion to a cash balance plan will require additional costs to provide disability benefits either outside the plan or with special provisions that are not based on benefit accruals.

Do Cash Balance Plans Share Risks Effectively?

Finally, it is important to point out that cash balance plan proponents have not produced serious actuarial analyses of what employers' costs will turn out to be in the long term. They have not subjected their proposals to the kinds of detailed scenario analyses and stress tests that would be required to reach an understanding of the likely costs, risks and benefits that such a plan would cause for sponsors and participants. For instance, few advocates of cash balance plans explain how their proposed plan would have fared if it had been in place during the past five years and had similar membership demographics. Instead, they focus on forecasting what the plan will look like going forward, which will be during the years when demographics are extremely favorable because it will include only new hires and no retirees. The timing of cash flows is also an issue due to the ability of participants to take lump sum distributions.

The lack of any long-term historical experience with cash balance plans makes it difficult to analyze how such plans will fare in the long run. There simply aren't cash balance plans that have operated long enough to have mature demographics and a large share of plan participants receiving benefits in retirement, as we find in many of today's public sector plans. Instead, our experience with cash balance plans involves only those that have favorable demographics because they are newer, which creates a misleading apples-to-oranges comparison with traditional defined benefit plans.

Given the relative newness of cash balance plans, it is important to back-test how the proposed plan would have fared under recent conditions with existing plan demographics, in order to evaluate how a cash balance plan would manage and share risk. Absent such analysis, we may be creating retirement plans that fail both employees and employers once plan demographics are mature.

Conversion to Annuity Is Critical

It is important to look at the annuity conversion rules under any proposed plan. A cash balance plan that offers generous employer pay credits (contributions) and interest crediting terms can result in a much smaller benefit if it provides unfair annuity conversion terms. Doing this would allow the plan to take workers' funds and essentially try to beat the spread (annuity conversion rate versus plan returns) to lower costs (similar to how pension bonds are designed to work). Utilizing an unfavorable conversion interest rate can easily reduce the value of an annuity by 20-50 percent. Instead, conversions should be done based upon the plan's assumptions (interest rates and mortality). For example, under the provisions of a cash balance plan proposed for Kentucky's hazardous duty employees group, the difference between using the proposed plan's assumptions and current market rates for annuities is approximately 50 percent.

The following chart shows the impact of annuity conversion rules and the form of the benefit:
Impact of Conversion Factors on \$100,000 at Retirement (age 62)—Discount Rates and Benefit Term

| Benefit for: | Retiree Only | Retiree Only | Retiree & Spouse | Retiree & Spouse | Retiree & Spouse | Retiree & Spouse |
|------------------------|----------------|----------------|------------------|------------------|------------------|------------------|
| Spouse gets: | 0% | 0% | 100% | 100% | 100% | 100% |
| COLA: | None | None | None | None | 3% | 3% |
| Discount Rate: | 7.5% | 5.5% | 7.5% | 5.5% | 7.5% | 5.5% |
| Annual Benefit: | \$9,775 | \$8,309 | \$8,541 | \$7,085 | \$6,300 | \$5,033 |

Effect on Employers' Retention

By front-loading accruals, and particularly by eliminating the large accruals that typically come late in a worker's career under a traditional defined benefit plan, cash balance plans do not have the same power to retain workers as traditional pensions. This may cause employers to be required to either offer higher wages or spend more to train new workers because turnover will likely increase. Cash balance plans may also have the unintended effect of inducing older workers to remain employed as they may be insecure about their ability to bear longevity risk.

While higher turnover is an explicit goal for some ideologically driven groups, employers typically benefit from the incentives provided by back-loaded accruals. Research, such as that done by the National Institute for Retirement Security (NIRS), indicates that public sector employers who do not offer traditional pension benefits must deal with higher turnover.²

Evaluating Proposed Cash Balance Plans

When evaluating any proposal, there are certain key factors for determining the adequacy of a retirement benefit—the percentage of final salary replaced after a full career, Social Security coverage, COLA provisions, spouse benefit and retirement age.

Financial advisers say that retirees need 75-90 percent of their prior earnings to keep up their standard of living in retirement. Thus, an evaluation of a proposed retirement plan should determine what level of income replacement will be provided after 30 years of participation, with consideration given to whether or not the workers will receive Social Security. (Many employees in the public sector do not contribute to or receive Social Security for public sector employment.) Together, the benefits of the employer plan and Social Security should replace 75-90 percent of pre-retirement income and, thereby, preserve an employee's standard of living.

Plans should also provide a post-retirement cost of living increase. It is even more vital for a benefit to have some protection from inflation if a plan allows earlier retirement or if workers do

² "The Three Rs of Teacher Pension Plans: Recruitment, Retention, and Retirement," NIRS, 2011. Available at http://www.nirsonline.org/storage/nirs/documents/3R%20Teacher%20Pensions/final_oct_31_3rs_issue_brief.pdf.

not participate in Social Security (which provides an annual COLA). Those pushing a plan design proposal may compare the initial monthly benefit of a traditional defined benefit plan that provides a 3 percent COLA with the proposed plan's lump sum value or with a monthly annuity amount based upon an annuity value that does not include a COLA. All comparisons should be provided on an apples-to-apples basis, so the information is clear and accurate.

Similarly, one should consider the value of the spouse benefit (which is sometimes subsidized and other times provided at the actuarial cost) when comparing proposed plans. It may be easy to omit the value of this benefit when comparing a lump sum amount from a 401(k)-type plan or cash balance plan with the value of the benefit provided by traditional pensions.

Changing from a traditional defined benefit plan to a cash balance plan will have varying effects on the retirement benefits of workers with alternative career patterns. For example, an accurate comparison will show that under a cash balance plan, two employees hired on the same date, making the same salary and retiring on the same date will have different annuity amounts based on their age difference on retirement. In evaluating a proposed cash balance plan compared with the current plan, it is important to understand these key factors:

- Percentage of final salary replaced after a full career;
- COLA provisions;
- Spouse benefit;
- Employer contribution required under each plan;
- Employee contribution required under each plan; and
- Interest crediting formula.

Appendix 1:

| <i>How Select Cash Balance Design Features Compare with Traditional Pensions</i> Public Sector: Proposed and Actual | |
|--|--|
| Employee Contributions | <ul style="list-style-type: none"> - Can be higher or lower than traditional defined benefit pension - Typically mandatory in public sector - Typically ranges from 4-10% of pay |
| Employer Hypothetical Wage Credits | <ul style="list-style-type: none"> - Can be comparable to employer's normal cost (not always true) - Can be comparable, higher or lower than traditional defined benefit normal cost - May be fixed (4-6%), can vary based upon age or service |
| Interest Credits | <ul style="list-style-type: none"> - Wide variety of approaches possible - Fixed interest credits: Typically 4-6% per year - Variable interest credits: Based on corporate bonds, treasury bonds, actual returns; may insure minimum interest credit, and may have maximum/cap - Approach recommended in Kentucky: 4% guarantee, plus 75% of actual returns above 4% (provided a floor, shared upside) |
| Annuity Provider | <ul style="list-style-type: none"> - Either through existing plan, possibly use a third-party provider - Third party typically means interest rate environment at retirement affects benefit level (timing risk) |
| Distribution/Annuitization Limitations | <ul style="list-style-type: none"> - No restrictions on those leaving before retirement (typically lump sum, can roll over to IRA) - Limit to specific age (59 1/2, 62, 65 or other normal retirement age) - May permit lump sum at retirement, annuity is always an option, may require annuity - Can limit lump sums to a certain percentage of benefit (20%, 50%, employee-provided portion) |
| Annuity Interest Rate | <ul style="list-style-type: none"> - Arbitrage opportunity for employer (or risk potential) - Treasury regulations not final, may affect public plans - Fixed rate, plan assumptions, market-based rate |
| Amortization of Unfunded Liability | <ul style="list-style-type: none"> - Depends on plan design, employer contributions calculated similar to traditional defined benefit plan - Implicit shift to employees possible |
| Cost-of-Living Increases | <ul style="list-style-type: none"> - Not part of plan design, can be offered (via reduced benefit amount), can be provided ad hoc or with dividends |
| Disability | <ul style="list-style-type: none"> - Not part of basic design, typically purchased separately (at additional cost) |
| Unreduced Early Retirement | <ul style="list-style-type: none"> - Not part of basic design, separate employee or employer contributions possible |