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Pension Issues: Cash Balance Plans

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Summary

In recent years, hundreds of employers have converted their traditional defined benefit pension plans into something called a *cash-balance plan*. In these plans, the employer regularly sets aside pay and interest credits into "hypothetical" employee accounts. The accounts are hypothetical because, while the employee receives periodic statements of the amount of pay and interest credits that have accumulated in his or her "account," all of the funds in the plan are commingled and the employer makes all the investment decisions. The employer also determines the percentage of pay and the interest rate (or index of rates) that will be credited to employee accounts. An employee covered by a cash-balance plan who separates from a company prior to retirement usually is given the option of receiving a lump-sum distribution from the plan, a practice that is not typical of traditional defined benefit pensions.

Cash-balance plans have become popular with employers both because they can reduce pension expenses and because they may be better appreciated by younger employees than traditional pension plans. Cash-balance plans provide the employer with the control over pension assets characteristic of traditional defined benefit plans while potentially reducing the employer's financial liability. In a traditional defined benefit pension, the retirement benefit usually is based on years of service and average income in the years immediately prior to retirement. In a cash-balance plan, the employer contributes a percentage of pay to the plan and pays interest at a rate that the employer may determine in advance. Funding is easier to estimate, and any excess growth in pension assets can be used to fund future pay and interest credits.

As more employers have converted their traditional pensions to cash-balance plans, two issues of particular concern to many pension plan participants have been (1) employer practices in disclosing the impact of the pension conversions and (2) the effect of conversions on older and long-service employees. Employees who are informed about the future value of their benefits can better decide how to prepare for retirement, such as by saving more on their own. Employees who expect to change jobs several times over the course of their careers sometimes can accumulate larger retirement assets under a cash-balance plan than under a traditional plan, provided that they re-invest the lump-sum distributions they receive when they leave an employer. Employees who have worked for many years under a traditional pension, however, can experience substantial reductions in future benefit accruals as the result of a conversion to a cash-balance plan.

Section 659 of the *Economic Growth and Tax Relief Reconciliation Act of 2001* (P.L. 107-16) amended §4980(f) of the Internal Revenue Code to impose an excise tax of $100 per participant per day on any employer that fails to provide notice to plan participants of an amendment that would significantly reduce future benefit accruals. The Secretary of the Treasury may issue a simplified notice requirement for plans with fewer than 100 participants or that allow participants to choose between the old plans and the new plan. In December 2002, The IRS issued proposed regulations on applying age discrimination rules to cash balance plans. In April 2003, the IRS announced that it was withdrawing the part of the proposed regulation that deals with nondiscrimination in favor of highly compensated employees.

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Background on Retirement Plan Design

In the United States today, slightly less than half of all workers in the private sector participate in an employer-sponsored retirement plan. (See **Table 1**). This is roughly the same proportion of the workforce that had an employer-sponsored retirement plan in 1980. However, while the percentage of workers who participate in an employer-sponsored retirement plan has remained stable over the past two decades, the distribution of workers among the two main types of retirement plan has shifted substantially. Twenty years ago, most workers whose employer sponsored a retirement plan were covered by a traditional defined-benefit pension. Today, however, defined contribution plans, such as the 401(k) are the most prevalent form of employer-sponsored plan. Moreover, in recent years, hundreds of employers have converted their traditional defined-benefit pension plans into new "hybrid" plans that have characteristics of both a traditional pension and the popular 401(k) plan.

Table 1. Participation in Employer-sponsored Retirement Plans by Employees in the Private Sector in 2000

	Type of retirement plan		
	All types	**Defined benefit**	**Defined contribution**
Establishment Size			
1-99 workers	*33%*	*8%*	*27%*
100 or more workers	*65%*	*33%*	*46%*
Full-time workers	*55%*	*22%*	*42%*
Part-time workers	*18%*	*6%*	*12%*
All workers	*48%*	*19%*	*36%*

Note: Data represent 107 million workers employed in the private sector.

Source: National Compensation Survey, U.S. Department of Labor.

"Defined Benefit" and "Defined Contribution" Plans. Employer-sponsored retirement plans are legally classified as either *defined benefit* plans or *defined contribution* plans. In a defined benefit or "DB" plan, the retirement benefit usually is based on an employee's salary and years of service. In a typical DB plan, the participant accrues a retirement benefit that is equal to a percentage of the average pay earned over a period of years, such as the final 5 years with the employer. Typically, the benefit amount is determined by multiplying the employee's final

average pay by the number of years of service and the rate at which benefits accrue, commonly between 1% and 2% per year. For example, an employee with 30 years of service who accrues benefits at 1.5% per year would be eligible for a pension equal to 45% of final average pay upon reaching the plan's normal retirement age, which in most plans is 62 or 65. Many firms allow employees with 20 or more years of service to retire with a reduced benefit before reaching the normal retirement age.

Defined contribution – or "DC"– plans, such as those authorized by section 401(k) of the Internal Revenue Code, are much like savings accounts maintained by the employer on behalf of each participating employee.[1] The employer contributes a specific dollar amount or percentage of pay into the account, which is then invested in stocks, bonds, or other financial assets. In some plans, the size of the employer's contribution depends on the amount the employee contributes from his or her pay. When the worker retires, the retirement benefit is the balance in the account. This is the sum of all the contributions that have been made plus interest, dividends, and capital gains (or losses). The worker typically has the option to receive these funds in the form of a life-long annuity, as a series of fixed payments over a period of years, or as a lump-sum. Initially, many employers adopted defined contribution plans to supplement a traditional defined benefit pension. Increasingly, however, employers have chosen to sponsor a DC plan as their sole retirement plan.

The Locus of Risk in DB and DC Plans. In a traditional defined benefit plan, the employer promises to provide retirement benefits equal to a certain dollar amount or a specific percentage of the employee's pay. Employees who have become *vested participants* in the plan have a legal right to claim pension benefits when they reach the retirement age defined by the plan, which can be no later than age 65. To pay these promised benefits, the employer sets aside funds in a pension fund that is invested in stocks, bonds, and other assets. Retirement benefits are paid from the pension fund, and the employer is *at risk* for the benefits that have been promised to retired employees and their surviving spouses. If the assets in the pension fund lose value or appreciate too slowly to keep up with the promised benefits, the employer is responsible for the shortfall. Although employees who become vested participants in a traditional defined benefit pension plan have a legally enforceable claim to retirement benefits from the plan, the employer (or its agent) manages the pension fund and decides how the funds will be invested. Any assets in excess of the amount needed to pay benefits are the property of the employer, although these assets are subject to a federal excise tax of up to 50% if they are used for any other purpose than to provide pension benefits or health insurance for retirees.

In a *defined contribution* plan, the employer bears no financial risk beyond the obligation to make contributions to each employee's retirement account according to a formula specified in the plan. In a DC plan, it is the *employee* who owns the assets in his or her individual account. Thus, the employee bears the risk that the account will increase in value sufficiently to provide adequate income during retirement. If the contributions made to the account by the employer and the employee are too small, or if the securities in which the account is invested lose value

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[1] §401(k) is the section of the Internal Revenue Code that authorizes deferral of federal income taxes on amounts contributed to these plans.

or increase in value too slowly, the employee risks having an income in retirement that cannot sustain his or her desired standard of living. If this situation occurs, the worker might choose to delay retirement.

Reasons for the Shift to DC Plans. One reason that employers have been shifting their pension coverage from defined benefit plans to defined contribution plans is that DB plans generally are more difficult and costly to administer. For example, the *Employee Retirement Income Security Act* (ERISA) of 1974 (P.L. 93-406) requires that defined benefit pension plans must be *fully funded*. The employer's responsibility to fully fund benefits under a DB plan represents a financial risk to the plan's sponsor. In addition to bearing the financial risk associated with a DB plan, the employer incurs ongoing administrative expenses to assure that the plan remains in compliance with relevant federal regulations. An employer who sponsors a defined benefit plan also must pay insurance premiums to the *Pension Benefit Guaranty Corporation* (PBGC). The current premium – established in law by Congress – is $19 per participant per year.

To be fully-funded, the assets of a defined benefit plan must be equal to the *present value* of the benefits that have been accrued by the plan's participants.[2] To estimate the funding requirements of the plan, an actuary forecasts the age at retirement, length of service, final average salary, and eventual mortality of the firm's employees many years into the future. If a plan becomes "under-funded," the firm must restore it to fully-funded status over a period of years or risk losing its tax-qualified status, which can result in substantial taxes and penalties.[3] Moreover, any *unfunded liability* of the plan must be displayed on the firm's financial statements. (The reverse is also true. Should the plan become over-funded, the excess assets are shown on the firm's balance sheet).[4]

DC Plans Are Both Easier and Cheaper to Administer. A defined contribution plan is relatively easy to administer because a DC plan is *by definition* fully funded at all times. In a DC plan, an employer makes no promise about the amount of benefits to be paid during retirement; the firm merely commits itself to making contributions of a certain amount or percentage of pay during the employee's tenure with the employer (sometimes conditioned on the employee making contributions as well). Defined contribution plans are not insured by the PBGC, and so the firm pays no insurance premiums. The employee bears the risk that the contributions to the plan and its investment earnings will be sufficient to provide an adequate income during retirement.

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[2] A future stream of payments or income can be expressed as a lump-sum by calculating its "present value," which depends mainly on the length of time over which the benefits will be paid and the rate of interest at which these payments will be discounted to the present.

[3] A "qualified" pension is one that meets the standards of §401(a) of the Internal Revenue Code. Plan sponsors can deduct contributions to the plan from taxable income, and the plan participants defer taxes on the contributions and investment earnings until they have retired.

[4] Financial Accounting Standards Board Statement 87, *Employers' Accounting for Pensions* and 132, *Employers' Disclosures about Pensions and Other Post-retirement Benefits.*

Pensions and Employee Mobility. Traditional defined benefit plans can provide substantial retirement income to workers who spend an entire career with one employer; however, because length of service and final average pay usually are significant factors in determining the size of the benefit, DB plans are not well suited to the needs of workers who change jobs several times throughout their careers. Moreover, by the time a worker retires, inflation may have significantly eroded the value of pensions earned from past employers.[5] In contrast, retirement savings accrued in a DC plan are fully portable. These assets can continue to increase in value even after an employee moves on to another job because they can be "rolled over" into another employer-sponsored 401(k) or into an Individual Retirement Account (IRA) that will earn interest, dividends, and/or capital gains on a tax-deferred basis until retirement. At retirement, the money can be paid as a lump-sum, in a series of payments over a period of years, or as a life-long annuity purchased from an insurance company.[6]

The Cash-Balance Plan: A "Hybrid" Pension Plan

In recent years, several hundred, predominantly large, firms have converted their traditional pension plans into *hybrid plans* that have characteristics of both defined benefit and defined contribution plans.[7] The most popular of these has been the *cash-balance plan*.[8] A cash balance plan looks like a DC plan in that the accrued benefit is defined in terms of an account balance. Every year, the employer credits each employee's "account" with a fixed percentage of employee salary – typically 5% or 6% of pay – and pays interest on the accumulated account balance. However, in a cash balance plan, these account balances are merely bookkeeping devices that show the amount that each employee has earned under the plan. They are not *individual accounts* that are *owned* by the plan's participants.

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[5] Take, for example, a 30 year-old employee who separates this year from a firm after 5 years of service at a final average annual salary of $25,000. Assuming that benefits were accrued under the plan at 1.5% per year and that the employee is fully vested after 5 years, he or she will be entitled to a retirement benefit of $156 per month beginning at age 65. If inflation averages 3.0% per year over the 35 years until the employee reaches age 65, the real value of this benefit will be equivalent to just $56 per month in current dollars.

[6] A "single life annuity" pays benefits until the retiree dies. A "joint and survivor annuity" guarantees a benefit (at a reduced monthly amount) until the death of the retiree or the death of his or her spouse, whichever comes later.

[7] The exact number of conversions is not known. A survey conducted in 1999 indicated that 325 firms had converted traditional defined benefit pensions to cash balance plans. (See "Cash Balance Catches Fire," *Pensions & Investments*, May 31, 1999.)

[8] There are a number of other so-called "hybrid plans" besides cash-balance plans. Among them are "pension equity plans," "floor-offset plans," "age-weighted profit-sharing plans," and "target benefit plans." Cash balance and pension equity plans are legally classified as DB plans. Age-weighted profit-sharing plans and target-benefit plans are treated in the tax law as DC plans. Floor-offset plans consist of two associated plans: a DB plan and a DC plan. For a description of each, see EBRI Issue Brief 171, *Hybrid Retirement Plans: The Retirement Income System Continues to Evolve,* by Sharyn Campbell. Employee Benefit Research Institute, Washington, DC, March 1996.

The Internal Revenue Code designates plans that provide individual accounts for each participant and that pay benefits based solely on the contributions to the accounts and subsequent investment gains or losses as *defined contribution* plans. Any plan that does not fit this definition is a defined benefit plan.[9] All of the assets in a cash-balance plan are commingled in a pension trust managed by the employer or the plan's trustee. The individual accounts in a cash balance plan are merely *hypothetical* accounts used to describe an employee's accrued benefit. They are not *employee-owned individual accounts*. Legally, therefore, a cash balance plan is a defined benefit plan.

Reasons for Converting to a Cash Balance Plan. Cash balance plans have become popular both among employers seeking to reduce their pension-related expenses and among those who wish to spread current pension expenditures more evenly over their work force. Because benefits in a traditional defined benefit plan typically are based on final average pay, the cost to an employer of funding these benefits rises steeply as an employee approaches the plan's normal retirement age. In contrast, benefits in a cash balance plan accrue more evenly throughout an employee's tenure because they are based on *career-average pay* rather than *final-average pay*. Consequently, the cost of funding a cash balance plan does not rise steeply as an employee approaches retirement age. Converting a traditional pension to a cash balance plan will not necessarily reduce a firm's pension expense, but a conversion can be designed to achieve this result if it is among the plan sponsor's objectives . In a cash balance plan, the employer promises only to make regular pay and interest credits to the plan rather than to replace a specific percentage of final pay. An employer therefore could set the pay and interest credits at levels that reduces its total expenses compared to the previous defined benefit pension plan.

Another reason that cash balance plans have become popular is an increasing concern among employers that traditional pensions, designed mainly to benefit employees who spend 25 or 30 years with one employer, are ill-suited to, and not sufficiently valued by, younger employees in a highly mobile workforce. Cash balance plans can be attractive to younger workers because the benefit is described as an account balance — similar to a defined contribution plan like a 401(k) — and because employers usually pay departing employees their accrued benefit as a lump-sum distribution. Moreover, a larger proportion of total lifetime benefits accrue early in one's career under a cash balance plan than under a traditional pension based on final average pay. Younger workers often prefer the "front loaded" benefit of a cash balance plan to a traditional pension in which the bulk of benefits accrue in the years just before retirement.

Key Characteristics of Cash-Balance Plans. Cash-balance plans combine employer ownership of pension assets with the more predictable financial liability typical of defined contribution plans.

The Employer Owns Any Excess Plan Assets. Although an individual account is attributed to each employee in a cash-balance plan, these are only "hypothetical" accounts used for accounting purposes. While in a cash-balance plan,

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[9] 26 USC §§ 414(i) and 414(j).

a vested employee has the legal right to receive retirement benefits from the plan, it is the *employer* who decides how the plan's assets will be invested. The employer also decides the interest rate (or index of rates) that will be credited to the accounts. Many firms peg their interest credits to the average yield on 1-year U.S. Treasury Bills or the interest rate paid by 10-year Treasury Notes. In a defined contribution plan, on the other hand, the *employee* (once vested) owns all of the assets in his or her account.[10] Furthermore, in most defined contribution plans, the employee has a choice of investment options, ranging from low-yielding but very safe U.S. Treasury securities to higher-yielding but riskier common-stock mutual funds.

If the assets held by a cash balance plan exceed of the amount needed to pay benefits that have been earned under the plan, the excess belongs to the employer. Therefore, if the assets in the pension fund appreciate at a rate greater than is needed to make interest credits to employee accounts, the employer can use these gains as a source from which to make future pay credits and interest credits to employee accounts. However, if the interest rate that the employer promises to pay to employees in a cash-balance plan turns out to be higher than the rate of return actually earned by the assets in the pension fund, the employer is liable for any additional payments necessary to keep the plan fully funded. Because the employer owns any excess assets in the pension plan, it can take assets out of the plan and use them for other purposes; however, to discourage plan sponsors from "raiding" pension funds in this way, Congress has made such *asset reversions* subject to an excise tax of up to 50% in addition to any corporate income taxes that may apply.[11]

Employer's Financial Liability Is More Predictable. Funding a cash-balance plan is more like funding a defined contribution plan than a traditional defined benefit plan. In most traditional DB plans, the employer promises to replace a proportion of the employee's final average pay and is legally obligated to set aside sufficient funds to pay the promised benefits. Under a cash-balance plan, the employer promises only to make regular pay and interest credits to the plan rather than to provide a specific amount of retirement income. Moreover, because the benefits in a cash-balance plan accrue based on *career-average* pay rather than *final-average* pay, the employer will not face steeply rising pension costs as an employee approaches the plan's normal retirement age. Some employers who have converted traditional defined benefit plans to cash-balance plans have been able to suspend their contributions to the pension plan, making the required pay and interest credits from excess pension fund assets. Administrative costs also can be lower in a cash-balance plan than in a traditional DB plan because contributions are based on simple percent-of-pay and interest-rate formulas, and also because most employers offer departing employees the opportunity to take their accrued benefit as a lump-sum rather than as an annuity. This relieves the employer of the long-term financial liability of funding the employees' benefits, the obligation to pay insurance premiums to the Pension

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[10] An employee is immediately vested in his or her contributions to a DC plan and in the earnings on those contributions. The employee must be fully vested in employer contributions and earnings on those contributions no more than 3 years after joining the employer if "cliff" vesting is used or after no more than 6 years if graded vesting is used.

[11] *Omnibus Budget Reconciliation Act of 1990* (P.L. 101-508).

Benefit Guaranty Corporation (PBGC) for these former employees, and ongoing administrative and record-keeping expenses.

Interest Credits. In a cash-balance plan, the value of the benefit accrued by each employee depends crucially on the rate of interest the employer credits to the plan and the number of years over which the interest credits are compounded. This contrasts with a traditional DB pension, in which interest rates play no role in determining the amount of an employee's pension at the plan's normal retirement age. In a cash balance plan, the rate of interest that the employer credits to the plan and the number of years over which these interest credits are compounded have the greatest weight in determining the value of an employee's retirement benefit. One reason that long-service workers may not fare as well as more junior employees when an employer converts a traditional DB plan to a cash balance plan is that the more senior workers will have fewer years during which additional interest payments will be credited to their cash balance accounts. For this reason, some employers allow workers with long periods of service to remain under the old plan.

Converting a Traditional Pension to a Cash Balance Plan

Setting the Initial Account Balance. An employer that converts a traditional defined benefit pension plan to a cash balance plan first will have to choose a method for establishing the initial account balance for each participant. An employer can set the initial value of a cash balance account at any amount. Some employers choose to set the initial account balance equal to the present value of the pension benefit that each participant had accrued under the traditional pension plan. Some employers set the initial account balance at zero, while others set the initial balance somewhere between zero and the present value of benefits accrued under the old plan. Regardless, employees who separate from the employer and choose to take a lump-sum distribution *must* be paid the greater of the present value of their accrued benefit under the old plan or the value of the cash balance account.

There are at least two reasons why an employer might establish the opening value of the cash balance plan at less than the value of the benefit that had been accrued under the old plan: first, it allows the employer to apply pay and interest credits to the cash-balance account from money that is already in the pension fund. In such cases, an employer might be able to go several years without making additional contributions to the plan. Second, by establishing cash-balance accounts with low initial values, the employer can realize gains from rising interest rates and limit the costs it incurs from falling interest rates.[12]

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[12] For example, if an employee had accrued benefits under the old plan with a present value of $30,000, and the cash-balance account is established with an initial value of $25,000, the employer must pay the greater of these two amounts if the employee leaves the company and elects to take a lump-sum. If interest rates rise, and the present value of the old benefit falls to less than $30,000, the employer would be obliged to pay the departing employee only the lower amount. If the opening value of the cash-balance account had been set at $30,000 the employer would have lost the chance to benefit from an increase in interest rates. If interest rates fall after the cash-balance account is established, the present value of the employee's

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"Wear Away" or the "Benefit Plateau". If the initial value of a cash balance plan is established at less than the present value of the employee's accrued benefit under the old plan, the employee ceases to earn *new* pension benefits until subsequent pay and interest credits equalize the value of the two plans. Pension analysts call this period when no new benefits accrue a "benefit plateau" or "wear-away" because even if the employer begins to apply pay and interest credits to the cash balance account immediately, the employee must "wear away" the difference between the starting account balance and the value of their benefit under the old plan before new benefits begin to accrue.

If an employer sets the opening balance of an employee's hypothetical cash balance account equal to (or greater than) the present value of benefits accrued under the traditional plan, there is no "wear away"period and the employee begins to accrue new pension benefits immediately. Employees also can accrue new benefits immediately if they are all given an initial cash balance account of zero and the employer stipulates that the employee's total benefit is the *sum* of the benefit accrued under the old plan and the value of the cash balance account. Some firms that have followed this method have put the benefits that employees accrued under the old plan into an interest-bearing account so that these benefits will continue to increase in value.

Older Workers and Cash Balance Conversions. Because benefits accrue more evenly over a career in a cash-balance plan than under a traditional defined benefit pension, employees with long periods of service under traditional pension plans sometimes find that their future benefit accruals will be substantially reduced after a conversion to a cash balance plan. For example, if the employer has established the opening value of the cash-balance plan at less than the present value of the benefits accrued under the old plan, these employees may face several years of work during which they will accrue no new pension benefits. Even without this so-called "wear away" period, however, employees may earn substantially smaller *future* pension benefits under a cash balance plan than they would have earned if the traditional defined benefit plan had remained in place. This can happen because benefits do not grow rapidly during the last few years before retirement under a cash balance plan as they do under a traditional defined benefit pension in which benefits are based on final average pay.

Consider, for example, a 45-year-old employee with 10 years of service in a traditional defined benefit plan in which benefits accrue at 1.5% per year and the benefit is based on average pay in the final five years of work. Assuming that the worker's average salary in the previous 5 years was $45,000, he or she would already have accrued a benefit worth $563 per month, beginning at the plan's normal

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[12] (...continued)
accrued benefits under the old plan will rise, and the employer must pay a departing employee the higher amount. For employees who stay with the firm, falling interest rates will lengthen the period during which they are earn no *new* benefits. The value of the old plan will rise, so it will take longer for the value of the cash-balance plan to catch up.

retirement age.[13] If the employee were to continue working for another 20 years and received annual raises of 3.0% per year, the accrued benefit would reach $3,195 per month by age 65. Expressed as a lump sum, this is equivalent to receiving $463,000 at age 65.[14] Now, assume instead that the employer converted to a cash balance plan when the employee was age 45. If the employer set the opening balance equal to the present value of benefits accrued under the traditional plan, and paid an annual wage credit of 7% and an annual interest credit of 5.5%, this employee would accrue a total benefit with a present value of $254,000 by age 65. This is a reduction of $209,000 (45%) compared to what he or she would have earned under the traditional pension.

Choosing an Interest Rate. When choosing the rate at which interest will be credited to employee accounts in a cash-balance plan, an employer will likely consider several factors:

- A low interest rate will directly reduce the cost of interest credited to employee accounts.
- A low interest rate will increase the potential "interest-rate spread" between the rate paid on employee accounts and the rate at which the fund's assets actually appreciate.
- A low interest rate decreases the likelihood that the firm will have to pay an employee who separates before retirement a lump-sum distribution that is *more* than the face-value of the employee's cash balance account. (This outcome (called "whipsaw") occurs if the plan credits interest to employee accounts at a higher rate than it must use to calculate lump-sum distributions.)

Policy Issues

(1) Determining the Value of Lump-Sum Distributions. Employers converting traditional pensions to cash balance plans have done so both to reduce costs and to make their pension plans more easily understood by employees. Cash balance plans offer employers continued ownership of pension fund assets and more limited financial risk than traditional defined benefit pensions. Because many employers pay accrued benefits under a cash-balance plan as a lump sum to employees who separate before retirement, the benefit is portable and offers employees who change jobs the opportunity to re-invest their accumulated benefits. This characteristic is not unique to cash-balance plans, however. Accrued benefits can be paid to departing employees as a lump-sum under traditional pension plans, too; however, in either a traditional DB plan or a cash-balance plan, the written consent of both the employee and his or her spouse is required for lump-sum distributions of more than $5,000.

Because cash balance plans are not individual accounts owned by the employee, the IRS has based federal regulations for determining the value of a vested

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[13] (.015 * 10 * 45,000) = $6,750. $6,750/12 = $562.5.

[14] In August 2003, a balance of $463,000 in the *Thrift Savings Plan* would purchase a level, single-life annuity of $3,196 per month at age 65, based on an annuity interest rate of 3.63%.

employee's accrued benefit — and the amount of a lump-sum distribution from the plan — on the sections of ERISA and the Internal Revenue Code that govern *defined benefit plans*. The difficulty in valuing lump-sum distributions from cash balance plans is that the federal statutes governing these plans describe the accrued benefit in very different terms than the plans themselves use. Whereas cash balance plans describe accrued benefits in terms of an "account balance," the relevant federal statutes describe accrued benefits in *all* defined benefit plans in terms of an "annual benefit commencing at normal retirement age."[15] The law requires that any other form of payment must be "the actuarial equivalent of such benefit."[16] Therefore, determining the value of a lump-sum distribution from a cash balance plan in compliance with ERISA and the tax code depends on the meaning of the terms "accrued benefit" and "actuarial equivalent of such benefit" as they apply to cash balance plans.

ERISA protects departing employees who receive lump-sum distributions from being paid less than the *present value* of the benefit that would be payable at the plan's normal retirement age. Federal regulations prescribe the methods for valuing lump-sum distributions from traditional DB plans, and the IRS has published regulatory guidance for valuing lump-sum distributions from cash balance plans.[17] Under the regulatory guidance published by the IRS, the employer must project the cash balance account forward to the plan's normal retirement age using the interest rate or index of rates set forth in the plan documents. This amount must then be discounted to the present, using the interest rate paid by 30-year U.S. Treasury bonds in the month prior to the distribution.[18] A departing employee must be paid the greater of the present value of the cash balance account as determined by this method or the present value of benefit that he or she had accrued under the old plan.

If the interest rate credited to a cash balance plan by an employer differs from the 30-year Treasury bond rate, then the present value of an employee's accrued benefit could be more or less than the nominal value of the employee's cash balance account. If the employer credits interest to a cash balance plan at a *higher* interest rate than the plan is required to be used for valuing lump-sum distributions, then the present value of the accrued benefit will be *greater* than the nominal account balance. The plan must pay the *greater* of these two amounts if a departing employee takes a lump-sum distribution. If interest is credited to the plan at a *lower* rate than is used for calculating lump-sum distributions, then the present value of the accrued benefit will be *less* than the nominal value of the account, and the employer can legally pay the lesser amount as a lump-sum distribution. A pre-retirement lump-sum distribution from a cash balance plan will need to be the same as the nominal value

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[15] 26 USC § 411(a)(7)

[16] 26 USC § 411(c)(3)

[17] 26 CFR 1.411(a), 26 CFR 1.417(e), and IRS Notice 96-8 (Bulletin 1996-6).

[18] Using the interest rate on 30-year Treasury bonds to value lump-sum distributions is prescribed by Section 767 of the *Retirement Protection Act of 1994* (P.L. 103-465). In October 2001, Treasury announced that it would suspend issuance of 30-year bonds. H.R. 1776 (108th Congress) would replace the 30-year Treasury bond as the interest rate used in calculating lump-sum distributions with the average rate of high-quality corporate bonds.

of an employee's cash balance account *only* if these two interest rates are equal. Three Federal Circuit Courts have ruled that lump-sum distributions from cash balance plans must be equivalent to the present value of an annuity beginning at the plan's normal retirement age, calculated in accordance with regulatory guidance issued by the Treasury Department.[19]

IRS Notice 96-8. The Internal Revenue Service has addressed the issue of lump-sum distributions from cash-balance plans in "proposed guidance" published as Notice 96-8 in February 1996.[20] The notice states that the accrued benefit under a cash-balance plan includes the value of interest credits *up to the plan's normal retirement age*. As interpreted by the IRS, future interest credits comprise part of the nonforfeitable portion of the present value of the employee's accrued benefit. In other words, when determining the present value of an employee's accrued benefit, the employer must project the account balance forward to the plan's normal retirement age, including the regular interest credits that have been promised to plan participants.[21] The *present value* of the accrued benefit will be same as the *nominal value* of the cash balance plan only if the same interest rate is used to project the account forward to normal retirement age and to discount it back to the present. The interest rate credited to employee accounts is chosen by the employer, but the discount rate is prescribed by federal law.[22] Consequently, there may be many instances in which the two rates differ.

The practical effect of the IRS guidance on the method for valuing lump-sum distributions from cash balance plans is that any employer who credits interest to a cash balance plan at a rate *higher* than the rate paid by 30-year Treasury bonds will be legally obligated to pay a pre-retirement lump-sum distribution that is *more* than the nominal value of an employee's cash balance account, a circumstance sometimes referred to as "whipsaw." Conversely, an employer who credits interest to a cash balance plan at a rate *lower* than the rate paid by 30-year Treasury bonds could legally pay a pre-retirement lump-sum distribution that is *less* than the nominal value of an employee's cash balance account. The *nominal* value of a cash balance account will differ from the value of a *lump-sum distribution* from the account whenever the interest rate credited to participants by the employer differs from the rate at which employers are required by law to calculate the *present value* of an employee's *accrued benefit*.

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[19] *Esden v. The Retirement Plan of the First National Bank of Boston,* (2nd Circuit, No. 99-7210, September 12, 2000), *Lyons v. Georgia-Pacific Corporation Salaried Employees Retirement Plan*, (11th Circuit, No. 99-10640, August 11, 2000), and *Berger v. Xerox Corp. Retirement Income Guarantee Plan*, (7th Circuit, No. 02-3674, August 1, 2003).

[20] 26 CFR §1.411(a), 26 CFR §1.417(e), and IRS Notice 96-8 (Bulletin No. 1996-6).

[21] Some employers have avoided — temporarily — the necessity of projecting interest credits into the future and then discounting them to the present by establishing the "normal retirement age" as age 65 or after 5 years of employment, whichever comes first. The IRS reportedly has yet to issue a favorable determination of compliance with the Internal Revenue Code for any plan that has adopted this definition of "normal retirement age."

[22] 26 USC §417(e)(3).

(2) Age Discrimination. ERISA, the Internal Revenue Code, and the *Age Discrimination in Employment Act* (P.L. 90-202) all prohibit reductions in benefit accrual rates that result directly from an employee's advancing age.[23] Some pension analysts have questioned whether cash-balance plans discriminate against older employees because interest credits compound over fewer years for these workers, resulting in a lower benefit at retirement compared to younger employees with the same initial account balance. In December 2002, the IRS issued proposed regulations describing the means by which it will evaluate cash-balance plans with respect to these statutes.[24]

In a traditional defined benefit pension plan, the employee's accrued benefit typically is based on years of service, final average salary, and a *benefit accrual rate*. ADEA, ERISA, and the IRC prohibit defined benefit plans from reducing "the rate of an employee's benefit accrual" either "because of age" (ADEA) or "because of the attainment of any age" (ERISA, IRC). With respect to traditional defined benefit plans, the meaning of these terms is unambiguous. For example, it would be unlawful for the plan to specify an accrual rate of 1.5% per year for employees under age 40 and an accrual rate of less than 1.5% per year for employees age 40 or older. Likewise, it would be unlawful for the plan to specify a reduction in benefit accruals that is *indirectly* conditioned on an employee's age. This means that a plan may not legally provide for a reduction in the benefit accrual rate based on an employee's eligibility to receive a retirement annuity from the plan or based on an employee's eligibility for Social Security retired worker benefits. In the first instance, the reduction in the rate of benefit accrual would be conditioned on the employee having reached the plan's early retirement age, which is a prohibited practice.[25] In the second instance, the reduction in the benefit accrual rate would be based on the employee having attained age 62 (the minimum age at which a worker can apply for Social Security retirement benefits), which also is prohibited.

Reductions in Accrual Rates that are Permissible under Federal Law. Although federal law prohibits reductions in benefit accrual rates that are directly or indirectly conditioned on the employee's age, it does not prohibit all reductions in accrual rates that *in practice* are more likely to affect older employees rather than younger employees, provided that the reduction is made with reference to something other than age. It is, for example, permissible for a reduction in the benefit accrual rate to be based on *years of service*. A plan might specify that the benefit accrual rate for the first 20 years of service is 1.5% per year and the accrual rate for years 21 and above is 1.0%. Although employees with more than 20 years of service would tend to be older than employees with fewer than 20 years of service,

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[23] These prohibitions on age discrimination in employee benefits are codified at 29 U.S.C. § 1054(b)(1)(H)(i), 26 U.S.C. § 411(b)(1)(H)(i), and 29 U.S.C. § 623(i), respectively.

[24] "Reductions of Accruals and Allocations Because of the Attainment of Any Age," *Federal Register*, vol. 67 (238), December 11, 2002, pp. 76123-76142.

[25] Benefits need not accrue beyond the plan's normal retirement age, provided that the plan makes an adjustment to the employee's benefit to reflect a delayed retirement credit.

this would not always be the case.[26] Since the reduction is not directly or indirectly conditioned on the employee's age, it would not be a prohibited practice. A plan also may limit either the number of years over which benefits accrue or the total benefit amount. Thus, a plan could specify that no benefits will accrue after the 30th year of service (or some other number of years), or that the accrued benefit cannot exceed some specified percentage of final average pay or a specified dollar amount. Again, while such limitations will naturally be *correlated* with employee age, they are not *conditioned* on employee age, and thus they would not be prohibited under federal law.

The Case of Cash Balance Plans. If two employees covered by a cash balance plan both earn the same pay and have the same percentage of pay credited to their accounts, it is inevitable that the pension benefit earned for a year of work will be *smaller* for the *older* of the two employees. This will be so regardless of whether the accrued benefit is expressed as an annuity payable at the plan's normal retirement age or as the present value of such an annuity. This result occurs because the older employee will reach the plan's normal retirement age in fewer years. For example, assume that Employee A is 40 years old and Employee B is 50 years old. Each earns $40,000 per year and their employer contributes wage credits equal to 5% of pay to a cash balance plan and pays interest on their account balances at a rate of 6% per year. The plan has a normal retirement age of 65. Each will receive a pay credit of $2,000 this year; however, the benefit accrued by Employee A for the year will be worth more *at retirement* than the benefit accrued by Employee B.

If Employee A and Employee B both receive annual salaries of $40,000 and each receives a pay credit of $2,000 this year, have they not both accrued benefits of equal value? No. Although each has received a credit toward his cash balance account that is equal to 5% of pay, when this amount is expressed in terms of its *annuity value at the plan's normal retirement age* or as the *actuarial equivalent* of such an annuity, the $2,000 received this year is worth more to 40-year-old Employee A than to 50-year-old Employee B. Assuming an interest rate of 6%, Employee A's $2,000 pay credit this year will grow to $8,583 by the time he or she reaches age 65, 25 years from now. For 50-year-old Employee B, a $2,000 pay credit this year will grow to just $4,793 by the time he or she reaches the plan's normal retirement age of 65 (assuming a 6% annual rate of interest). Thus, in a typical cash balance plan, the *annual rate of benefit accrual* will be lower for an older employee than for a younger employee with the same salary. For the same reason, it also is possible that the rate of benefit accrual will decline as an employee ages, because there will be fewer years over which each additional pay credit will earn interest.[27] Some employers apply higher pay credits to long-service employees to make up for the smaller number of years during which further interest credits will accrue before they retire. Nevertheless, higher pay credits for greater length of service may not

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[26] For example, a 40-year-old employee with 20 years of service would accrue additional benefits at the rate of 1.0% per year while a 45-year-old employee with 10 years of service would accrue benefits at 1.5% per year for up to 10 more years.

[27] The benefit accrual rate for an individual also will be affected by any changes in the percentage of pay credited to the plan, changes in interest rates, and changes in an employee's annual pay.

necessarily be sufficient to prevent the declining rate at which benefits accrue under a cash balance plan as the employee approaches the plan's normal retirement age.

Defining the "Accrued Benefit" in a Cash Balance Plan. According to the Internal Revenue Code, the term "accrued benefit" means ". . . the employee's accrued benefit determined under the plan . . . expressed in the form of an annual benefit commencing at normal retirement age . . . ."[28] The Code further states that ". . . if an employee's accrued benefit is to be determined as an amount other than an annual benefit commencing at normal retirement age, . . . the employee's accrued benefit shall be the actuarial equivalent of such benefit or amount. . . ."[29] The "actuarial equivalent" of an annuity starting at the plan's normal retirement age is the *present value* of such benefit. A "present value" is a means of expressing a stream of future payments as a lump sum. The present value of a stream of payments is inversely related to both the amount of time until the payments commence and to the rate of interest.

Statutory Definition of Age Discrimination. ERISA and the Internal Revenue Code state that a reduction in the rate of benefit accrual is prohibited if a plan reduces the rate of an employee's benefit accrual *"because of the attainment of any age."* In practice, a plan is likely to be found in violation of these statutes if a declining benefit accrual rate *is conditioned* on employee age, but not if the declining accrual rate is merely *correlated* with employee age. In regulatory guidance, the IRS has stated that a plan will not be disqualified from favorable tax treatment ". . . solely because of a positive correlation between increased age and a reduction or discontinuation of benefit accruals or account allocations under a plan."

In a cash balance plan, it generally will be the case that the present value of the retirement benefit accrued in a given year by an older employee will be less than the present value of the benefit accrued by a younger employee earning the same salary. This is an inherent – and legally permissible – characteristic of many *defined contribution* plans, such as those authorized under Section 401(k) of the IRC. The basis for claims of age discrimination with respect to cash balance plans lies in their status as *defined benefit* plans.[30] Cash-balance plans are sometimes popularly referred to as "hybrid" plans because, regardless of their legal status as defined benefit plans, they have some characteristics of both defined benefit and defined contribution plans. If a cash balance plan were to be tested for discrimination against older employers as if it were a *defined contribution* plan, it would be in compliance with the relevant statutes, provided that "the rate at which amounts are allocated to the employee's account is not reduced, because of the attainment of any age."[31] In a defined contribution plan, therefore, if there is no age-related trigger that reduces the percentage of pay that an employer contributes to an employee's account, the plan is considered non-discriminatory with respect to age.

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[28] 26 U.S.C. § 411(a)(7).

[29] 26 U.S.C. § 411(c)(3).

[30] Any plan that does not consist of employee-owned individual accounts is legally a defined benefit plan (26 U.S.C. §§ 414(i) and 414(j)).

[31] 26 U.S.C. § 411(b)(2)(A).

The Internal Revenue Service has generally maintained that cash balance plans must be held to the same regulatory standards that apply to defined benefit plans, but there have been exceptions to this rule. In its regulatory guidance on the valuation of lump-sum distributions from cash-balance plans, for instance, the IRS has held cash balance plans strictly to the regulatory standards applicable to defined benefit plans.[32] On the other hand, the IRS has issued regulations that permit cash balance plans that meet certain conditions to be tested for another form of discrimination (in favor of highly-compensated employees) *as if they were defined contribution plans*.[33] The proposed regulation published by the IRS in December 2002 also would test cash balance plans for discrimination on the basis of age that is similar to the test applied to defined contribution plans.

Disagreements among federal courts that have ruled on this issue suggest that Congress may have to amend the relevant statutes to clarify the manner in which cash balance plans are to be evaluated for age discrimination. In a case decided by the U.S. District Court for the Southern District of Indiana, the court ruled that a cash balance pension plan does *not* violate federal prohibitions on age discrimination merely because the rate of benefit accrual can be construed to decline with age.[34] In a case argued before the U.S. District Court for the Southern District of Illinois, however, the court ruled that IBM Corporation violated the *Employee Retirement Income Security Act's* prohibition against age discrimination when it adopted a cash balance pension plan because when benefits under the plan are measured as a monthly pension at the plan's normal retirement age, the rate of benefit accrual declines as the participant's age rises.[35]

Proposed IRS Regulation Issued in December 2002. In December 2002 the Treasury Department issued proposed regulations for applying age-discrimination rules to cash balance plans.[36] Specifically, the regulations address Internal Revenue Code sections 411(b)(1)(H) and 411(b)(2)(A), both of which were enacted in 1986, as they apply to cash balance plans.[37]

Section 411(b)(1)(H) of the Internal Revenue Code states that the rate of benefit accrual under a *defined benefit plan* cannot be reduced "because of the attainment of any age." Section 411(b)(2)(A) states that the rate of allocation in a *defined*

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[32] IRS Notice 96-8 (Bulletin No. 1996-6).

[33] 26 C.F.R. 1.401(a)(4)-8. Not all plans opt for this safe-harbor test, choosing instead to be tested under a regulation that applies to career-average pay defined benefit plans.

[34] *Eaton v. Onan Corporation* (S.D. Indiana, No. IP 97-814-C H/G, September 29, 2000). A settlement was reached between the parties to this case in 2001 in which Onan Corporation agreed to pay $23 million to plan participants. ("Onan to Pay $23 Million to Settle Cash Balance Plan Suit," *Employee Benefit Plan Review*, V. 56 (8), February 2002.)

[35] *Cooper v. IBM Personal Pension Plan*, Southern District of Illinois, No. 99-829-GPM, July 31, 2003. Officials of IBM have stated that the company will appeal the verdict.

[36] "Reductions of Accruals and Allocations Because of the Attainment of Any Age; Application of Nondiscrimination Cross-Testing Rules to Cash Balance Plans," *Federal Register*, December 11, 2002, (Vol. 67 No. 238), pages 76123-76142

[37] P.L. 99-509, (October 21, 1986), *Omnibus Budget Reconciliation Act of 1986*.

contribution plan cannot be reduced "because of the attainment of any age." Both ERISA and the *Age Discrimination in Employment Act* (ADEA) have similar provisions that prohibit discrimination in employee benefit plans on the basis of age. The Internal Revenue Service has stated that "the new proposed regulations are meant to be consistent with the requirements of ERISA and ADEA."[38]

The major provisions of the proposed regulations are that:

- Reductions - both direct and indirect - in benefit accruals or allocations because of age are prohibited;
- In testing for age discrimination, the IRS will look at what the benefit accrual or allocation would be if the plan participant were younger. A plan on which the accrual or allocation would be higher if the participant were younger (and all other factors were constant) will be considered discriminatory;
- For a "traditional" defined benefit plan, the rate of benefit accrual is defined as the increase in the accrued benefit in the form of a single-life annuity at the plan's normal retirement age. For a cash balance plan, the rate of accrual is the hypothetical pay credit and any interest credit not already accrued;
- In a cash balance plan conversion in which the benefit under the traditional defined benefit plan is frozen, and all new accruals occur under a cash balance formula, the plan will satisfy the age discrimination test unless the pay credit for an older participant is less than it would be if the participant were younger;
- In a cash balance plan conversion in which the benefit under the traditional defined benefit plan is converted to an opening account balance, the plan will generally satisfy the age discrimination test if the opening account balance is computed using "reasonable" actuarial assumptions and if the pay credits are not reduced based on the participant's age;
- If a defined benefit plan has both traditional and cash balance formulas, each benefit formula can be tested for age discrimination separately;
- The regulation revises the rules applicable to traditional defined benefit plans for accruals after the plan's normal retirement age, including the effect of any benefit distributions.

Irs Withdraws Part of Proposed Regulation. In Announcement 2003-22, issued April 7, 2003, the Treasury Department announced that it would withdraw the proposed regulation it had published in December 2002 under Code §401(a)(4) with respect to nondiscrimination in favor of highly compensated employees. The withdrawal of the *nondiscrimination regulations* will not affect the proposed *age discrimination regulations* for cash balance plans and cash balance conversions, which were the subject of a public hearing held on April 9-10, 2003.

In a press release, the Treasury Department stated that "the proposed nondiscrimination regulations would have had the unintended effect of making it

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[38] "New Regulations Address Cash Balance Plans," *Employee Plans News*, Vol. 2 (Winter 2003), Internal Revenue Service, Washington DC.

more difficult for employers to provide workers with transition relief in cash balance conversions. When the effect was identified, Treasury and IRS decided to withdraw the proposed nondiscrimination regulations immediately so they do not prevent employers from reducing the impact of cash balance conversions on their employees." Comments received by the Treasury had raised questions about the viability under the proposed nondiscrimination regulations of some transition rules used by plans that convert from traditional benefit formulas to cash balance formulas. Examples of these transition rules include: (1) giving participants who meet certain age or service criteria a choice between the old and new formula, (2) providing certain participants the greater of the benefit under the traditional formula or the benefit under the cash balance formula, (3) "grandfathering" certain participants under the traditional formula, and (4) providing transition credits to certain participants. The Treasury said it did not intend the regulations to negatively impact these options. Treasury will accept comments on revisions to the proposed nondiscrimination regulations through July 27, 2003.

Bills in the 108th Congress: Notice Requirement for Reductions in Future Benefit Accruals. Section 204(h) of ERISA requires pension plans to notify participants of any amendment that will result in a significant reduction in the rate of future benefit accrual at least 15 days before the amendment takes effect. Section 659 of the *Economic Growth and Tax Relief Reconciliation Act of 2001* (P.L. 107-16) amended §4980(f) of the Internal Revenue Code to impose an excise tax of $100 per participant per day on any employer that fails to provide notice to plan participants of an amendment that would significantly reduce future benefit accruals. The notice must be written in such a manner that it can be understood by the average plan participant and provide sufficient information so that the effect of the amendment is clear. The notice does not have to disclose the specific reduction in benefit accruals for any individual plan participant. The Secretary of the Treasury may issue a simplified notice requirement for plans with fewer than 100 participants or that allow participants to choose between the old plans and the new plan. The notice must be provided "within a reasonable time before the effective date of the amendment," as defined in regulations to be issued by the Secretary of the Treasury.

H.R. 1677 (Sanders) and **S. 825** (Harkin) of the 108th Congress would prohibit the Secretary of the Treasury from enforcing the proposed regulation on cash balance plans that was published on December 11, 2002. The bills would amend ERISA and the IRC to require companies converting to cash balance plans to allow workers who are age 40 older or who have completed at least 10 years of service to choose the benefit provided by the traditional plan benefit formula or to accept the benefit under the cash balance plan. The bills also would amend ERISA and the IRC to assure that workers continue to accrue new benefits after a traditional pension is converted to a cash balance plan, thus effectively prohibiting "wearaway" periods during which employees accrue no new pension benefits.

Potential Retirement Income: Comparing Traditional Pensions and Cash-Balance Plans

How do the pension benefits that accrue over a full career under a cash balance plan compare to benefits earned under a traditional defined benefit pension? The

answer depends on both the design of the plans and the behavior of the covered workers. Some characteristics of pension plans are governed by federal statute. These include the maximum number of years before a covered worker is fully vested, the distribution of retirement benefits between highly compensated employees and other workers, the proportion of benefits that can accrue late in a worker's career, and other requirements intended to preserve and protect employees' pension benefits. Even with these constraints on pension plan design, however, defined benefit plans may vary in the rate at which benefits accrue, the maximum number of years over which benefits accrue, and the method for determining the amount of salary on which the employee's pension benefit is based.

The most direct way to compare benefits under a cash-balance plan with those provided by a traditional defined benefit plan is to do so for two hypothetical employees whose yearly salaries and tenure with each employer are the same, but who differ in the type of retirement plan by which they are covered. Of course, any retirement plan can be amended to make it more or less generous, depending on the employer's willingness and ability to contribute to the plan and employees' preferences for pension benefits relative to cash compensation and other benefits. Furthermore, many employees also participate in a defined contribution plan, such as a 401(k), so that the defined benefit pension may not be their only source of employment-related retirement income.

The value of accrued pension benefits can be calculated at any point during a worker's career under both a traditional defined benefit plan and a cash-balance plan, provided that a few key characteristics of the plan and the employee are known. In a traditional defined benefit plan, the characteristics that typically determine benefits are:

- the salary base (typically average pay in the final 5 years of employment),
- the benefit accrual rate,
- the number of years of service that are counted to calculate the benefit,
- the normal retirement age,
- the early retirement age (if any), and
- the reduction in benefits for early retirement.[39]

The characteristics of a cash-balance plan that affect a worker's retirement benefits are:

- the employee's salary each year that they participate in the plan,
- the percentage of pay credited to the plan,
- the interest rate credited to the plan, and
- the number of years over which pay and interest credits are earned.

In the following tables, retirement benefits are compared under a traditional defined benefit pension and under a cash-balance plan for workers with identical

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[39] The following examples assume retirement at age 65.

annual earnings and lengths-of-service with their employers. The illustrative plans are "typical" in that they incorporate common characteristics of these plans. The tables show the pension benefits accrued under each plan by two pairs of workers, with one worker in each pair covered by a traditional defined benefit plan and the other covered by a cash-balance plan. The two pairs of hypothetical employees are:

- two workers who each spend 30 years with one employer and retire at the plans' normal retirement age (65 in these examples), and
- two workers who each have three employers over 30 years and who retire at the normal retirement age (65).

Assumptions Underlying the Estimates. In each case, the employees are first covered by an employer-sponsored retirement plan at age 35, when they earn an annual salary of $30,000. The employees receive annual pay increases of 5% for years 2 through 5, 4% for years 6 through 10, and 3% for each year after that. In the traditional defined benefit plan, benefits accrue at a rate of 1.50% per year for each year of service, and the pension is based on average salary during the final 5 years of employment. In the cash-balance plan, employees receive pay credits equal to 5.0% of pay for each of their first 10 years, 6.0% of pay for each of the second 10 years, and 7.0% of pay for each year after that. Interest is credited monthly at a 5.3% annual rate. Pay and interest credits continue to accrue until the worker retires (**Table 2**), or until the employee quits and takes a lump-sum distribution (**Table 3**). In each example, the present value of accrued benefits is based on a discount rate of 5.3%.[40] Employees are assumed to retire at age 65 with a remaining weighted average ("unisex") life expectancy of 21.0 years, based on tables published by the Internal Revenue Service.[41]

First Example: Full Career with One Employer. The estimates displayed in **Table 2** show the pension benefits accrued at various ages by two hypothetical workers who each spend a full 30-year career covered by either a traditional pension plan or a cash-balance plan. In this example, the *nominal value* of the cash-balance plan and the *present value* of the cash-balance plan are equal because the same interest rate is used to credit the plan and to value lump-sum distributions. The employee covered by the traditional defined benefit plan is entitled to receive a monthly pension of $2,835 ($34,018 per year) beginning at age 65. Given a remaining life expectancy of 21.0 years and a discount rate of 5.3%, the present value of this pension at age 65 would be $432,000. Under the cash balance plan described above, an employee with the same salary history would have accumulated an account balance at age 65 of $204,000. Assuming a discount rate of 5.3% and a remaining life expectancy of 21.0 years, this is equivalent to a pension of $1,338 per month ($16,056 annually). In this example, the cash balance plan produces a benefit that is worth only 47% of the benefit produced by the traditional pension at age 65.

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[40] The weighted average rate under I.R.C. §417(e) in July 2003 was 5.3%. (Notice 2003-48).

[41] "Required Distributions from Retirement Plans: Final Rule," *Federal Register*, vol. 67 (74), April 17, 2002, 'Single Life Table,' page 19012.

Varying the assumptions about benefit accruals under the traditional plan and the pay and interest credits under the cash-balance plan would alter these results. For example, if benefits accrued under the traditional plan at 1.25% per year rather than 1.50%, it would result in a monthly pension of $2,362 at age 65. This would increase the ratio of benefits in cash balance plan to the benefit under the traditional plan from 47% to 57%. Likewise, more generous pay and interest credits under the cash-balance plan would increase the benefit payable at retirement. If the employer contributed 7% of pay during for each year a worker participated in the plan, the balance at age 65 would be $243,000. This would generate a monthly income of $1,594, given the interest rate and mortality assumptions used here. Alternatively, the firm could contribute the same pay credits as in the base case, but pay higher interest. Assuming a 1% increase in the interest credits to 6.3%, the cash-balance plan would be worth $237,000 at age 65, enough to generate a lifetime monthly annuity of $1,558.

The Effect of a Conversion. Subsequent to a conversion, benefit accruals will no longer rise steeply as an employee approaches the plan's normal retirement age, as they would in a traditional pension plan with a benefit based on final average pay. As a result, workers who are converted to a cash-balance plan often will end up with a smaller accrued benefit than if they had spent a full career covered by a traditional pension. In **Table 2**, the employee covered by the traditional plan has accrued pension benefits with a present value of $63,945 by age 50. Assuming that he or she works for another 15 years and receives pay raises of 3.0%, this employee would accrue benefits equal to $432,000 by age 65 under the traditional plan. If converted at age 50 to a cash-balance plan with an opening balance equal to the present value of benefits accrued under the old plan, the benefit at age 65 would have a present value of $243,000, assuming pay and interest credits of 7.0% and 5.3%, respectively. This is $189,000 less than the employee would have accrued under the traditional plan, resulting in a benefit reduction of 44%.

Table 2. Worker Spending 30 years with One Employer, Retiring at Age 65

		Present value of benefit or of account balance		**Monthly income beginning at age 65**	
Age	Annual salary	Traditional defined benefit plan	Cash-balance plan	Traditional defined benefit plan	Cash-balance plan
40	$37,924	**$8,690**	**$9,654**	**$207**	**$230**
45	$45,696	**$27,880**	**$24,474**	**$514**	**$451**
50	$52,975	**$63,945**	**$48,673**	**$910**	**$693**
55	$61,412	**$127,960**	**$82,709**	**$1,406**	**$909**
60	$71,194	**$240,057**	**$133,714**	**$2,038**	**$1,135**
62	$75,529	**$304,978**	**$159,194**	**$2,335**	**$1,219**
65	$80,129	**$432,338**	**$203,989**	**$2,835**	**$1,338**

Source: Estimates prepared by the Congressional Research Service.

Key assumptions underlying estimates:

Life expectancy in years at age 65 (unisex):	21.0
Career-average salary:	$53,302
Final-5 average salary:	$75,595
Benefit accrual rate, traditional plan:	1.50%
Average annual raise, first 5 years:	5.00%
Average annual raise, years 6 through 10:	4.00%
Average annual raise, years 11 and up:	3.00%
Pay credit, cash-balance plan, years 1 - 10:	5.00%
Pay credit, cash-balance plan, years 11 - 20:	6.00%
Pay credit, cash-balance plan, years 21 & up:	7.00%
Interest rate credited to cash-balance plan:	5.30%
Discount rate (26 CFR 1.417(e)), July 2003:	5.30%

Second Example: Three Employers Over a Career. **Table 3** shows the estimated pension benefits accrued under typical traditional and cash-balance pension plans by two workers who each have three employers between the ages of 35 and 65. Both workers spend 10 years with each employer and both are fully vested in their pension plans at the time they separate from each employer. They make the same annual salaries, and both retire at age 65. They differ only in the kind of pension plans in which they participate. It is assumed that the employee covered by the cash-balance plan receives lump-sum distributions from each employer upon separation and that the *full amount* of each distribution is re-invested in a tax-deferred retirement savings account. All re-invested lump-sums are assumed to earn an average annual return of 7.4%. The employee covered by the traditional pension does not receive lump-sum distributions, but is entitled to receive an annuity from each former employer beginning at age 65.

In this example, the worker covered by the traditional pension plans has accrued pension benefits with a present value of $330,000 at age 65. Note that this is *less* than the amount accrued by the employee who was covered by a single traditional pension in **Table 2**. This reduction occurs because the pension annuities earned from all but the most recent employer are based on salaries earned many years earlier that were much lower than the worker's salary in the 5 years before retirement. In contrast, the employee covered throughout his or her career by four cash-balance plans has accrued benefits totaling $253,000 by age 65. This is *more* than the employee covered by a single cash-balance plan in **Table 2**. This result occurs because the employee who changes jobs has the opportunity to re-invest the lump-sum distributions in assets that have a higher average yield than employers typically pay on cash-balance plans.

Employees who receive accrued pension benefits as a lump-sum years before they plan to retire often use some of the money for immediate consumption, thereby reducing the amount of funds available for retirement. Any "leakage" of lump-sum distributions into current consumption will reduce the total assets available at retirement.[42] The effect of these leakages on retirement income is especially adverse when they occur early in a worker's career or if they occur several times as a result of frequent job changes. For example, a $5,000 lump-sum received at age 30 will grow to $38,430 by age 65 if invested at 6.0%. By itself, this amount would be sufficient to produce an income of $264 per month for the reminder of the retiree's life, if used to purchase an annuity at age 65.[43] Lump-sum distributions received early in one's working life that are spent rather than saved result in disproportionately large reductions in assets available at retirement.

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[42] For more information, see CRS Report RL30496, *Pension Issues: Lump-Sum Distributions and Retirement Income Security,* by Patrick J. Purcell

[43] Based on purchase of a single-life annuity at age 65 at an interest rate of 4.5%.

Table 3. Worker Spending 30 Years with Three Employers, Retiring at Age 65

		Present value of benefit or of account balance		**Monthly income beginning at age 65**	
Age	Annual salary	Traditional defined benefit plan	Cash-balance plan	Traditional defined benefit plan	Cash-balance plan
40	$37,924	**$8,690**	**$9,654**	**$207**	**$230**
45	$45,696	**$27,880**	**$24,474**	**$514**	**$451**
50	$52,975	**$57,409**	**$52,017**	**$817**	**$740**
55	$61,412	**$109,794**	**$91,822**	**$1,217**	**$1,009**
60	$71,194	**$190,153**	**$158,055**	**$1,624**	**$1,342**
62	$75,529	**$236,676**	**$192,149**	**$1,822**	**$1,471**
65	$80,129	**$329,662**	**$253,453**	**$2,162**	**$1,662**

Source: Estimates prepared by the Congressional Research Service.

Key assumptions underlying estimates:

Life expectancy in years at age 65 (unisex):	21.0
Career-average salary:	$53,302
Final-5 average salary:	$75,595
Benefit accrual rate, traditional plan:	1.50%
Average annual raise, first 5 years:	5.00%
Average annual raise, years 6 through 10:	4.00%
Average annual raise, years 11 and up:	3.00%
Pay credit, cash-balance plan, years 1 - 10:	5.00%
Pay credit, cash-balance plan, years 11 - 20:	6.00%
Pay credit, cash-balance plan, years 21 & up:	7.00%
Interest rate credited to cash-balance plan:	5.30%
Discount rate (26 CFR 1.417(e)), July 2003:	5.30%
Average annual return on re-invested lump-sums:	7.40%

Additional Reading:

Cannon, Coleman J. "Cash Balance Pension Plans: Background, Issues, and Recent Developments." *Journal of Pension Planning and Compliance*. Vol. 27 (3). Fall 2001.

Motzenbecker, Douglas E. "Recent Case Law Developments Affecting Cash Balance Pension Plans." *The Labor Lawyer*. Vol. 17 (2). Fall 2001.

United States General Accounting Office. *Private Pensions: Implications of Conversions to Cash Balance Plans*. GAO/HEHS-00-185. September 2000.

United States General Accounting Office. *Cash Balance Plans: Implications for Retirement Income*. GAO/HEHS-00-207. September 2000.