CASH BALANCE PENSION PLANS AND OLDER WORKERS

Introduction

This Issue Brief discusses issues related to cash balance plan design in the context of both traditional defined benefit (DB) pension plans and 401(k) plans—the most prevalent type of defined contribution (DC) pension plan. Cash balance pension plans combine features of both DB and DC pension plans. How to protect the pension benefits of older workers and whether cash balance plans discriminate against older workers are key issues in the current public policy debate about cash balance plan conversions.

What Is a Cash Balance Pension Plan?

Because a cash balance pension plan combines features of both a DB and a DC pension plan (Table 1), it is often referred to as a "hybrid" pension plan (Coronado and Copeland 2003). Pension law, however, treats it as a DB pension plan because the plan specifies a monthly benefit at retirement. Cash balance plans have generally originated from conversions from traditional DB plans. They usually have not been started independently as new plans (U.S. General Accounting Office 2000).

Two important attributes of a cash balance plan are: (1) hypothetical or notional individual accounts—a DC feature, and (2) a formula for determining benefits at retirement—a DB feature.

Individual Accounts. Unlike a traditional DB pension plan, a cash balance plan provides workers with hypothetical or notional individual accounts (Table 1). Like traditional DB plans, workers are automatically enrolled in cash balance plans. Also like traditional DB plans, cash balance plans are insured by the Pension Benefit Guaranty Corporation. In a cash balance plan, each participant's account is periodically credited with a dollar amount by the sponsoring employer, usually based on a percentage of the individual's salary. Although a cash balance plan portrays benefits to employees in the form of an "individual" account, the cash balance account does not depend on the performance of plan assets. Contributions and investment earnings are not actually allocated to individual accounts; instead, contributions are made to a common trust fund for all participants, and benefits are paid directly from the fund.

Cash balance plans are similar to 401(k) plans in that they are communicated to workers in terms of a balance in an individual account, they are readily portable, and their benefits are based on earnings over the entire period of participation in the plan.

Benefit Formula. The cash balance pension formula determines benefits as a function of wages, pay credit rates, and interest credit rates. Contributions credited to the employee's account by the employer (pay credit) are generally quoted as a given percentage of the employee's pay. Interest credits equal to the product of the employee's credited account balance times an interest credit rate are also accrued in the account (Chart 1). An interest credit rate is either a fixed rate or a variable rate tied to an index, such as the 30-year Treasury bond rate, or the rate on one-year Treasury bills reset every six months.

According to the Bureau of Labor Statistics (BLS), the average annual employer contribution rate, i.e., pay credit, to cash balance accounts was 5.9 percent in 1997. The average rate of interest (annual interest credit) earned by all cash balance participants in 1997 was 6.6 percent (Elliott and Moore 2000). By comparison, the rate of return on 20-year Treasury Bonds averaged

Chart 1: Cash Balance Formula

$$\boxed{\text{Benefits accrued in a year}} = \left[\boxed{\text{Pay credit rate (\% of pay)}} \times \boxed{\text{Wage}}\right] + \left[\boxed{\text{Account balance}} \times \boxed{\text{Interest credit rate}}\right]$$

Note: For simplicity, Chart 1 assumes that pay credits and interest credits are both made at the end of the year.

6.7 percent that year. Given interest rate trends, it is likely that the interest rate earned by cash balance participants has declined since then. For example, the average interest rate on 20-year Treasury bonds was 5.0 percent in 2004 (Federal Reserve Board 2005).

How Prevalent Are Cash Balance Plans?

Conversion of traditional defined benefit plans to cash balance has increased rapidly over the past decade, particularly among the plans of large employers. Bureau of Labor Statistics data indicate that 23 percent of private sector full-time workers in medium and large establishments who were covered by a DB pension plan had a cash balance plan in 2000, compared to only 3 percent in 1991 (Green 2003). In 2003, approximately 26 percent of the participants in single-employer defined benefit plans were in cash balance plans. Among single-employer plans with 5,000 or more participants, approximately 29 percent of the participants were in cash balance plans[1] (PBGC 2005).

Why Cash Balance Plans Are Attractive to Some Workers

Cash balance plans appeal to some workers in comparison to traditional DB plans for many reasons. These include workers' demographic characteristics, job tenure plans, other opportunities in the job market, and the types of pension plans offered by employers. It is much less costly for an employer to convert an existing DB plan to a cash balance plan than to terminate the DB plan and start a replacement 401(k) plan. Thus, for many firms with ongoing DB plans, the relevant comparison is with cash balance plans. However, since 1999, the Internal Revenue Service has placed a moratorium on its approval of new cash balance plan conversions.

[1] These statistics include a small number of pension equity plans.

A cash balance plan:

Provides higher benefits to younger workers. Cash balance plans provide greater benefits earlier in a worker's tenure with an employer. These plans are worth more to younger workers because they allow younger workers to accrue higher benefits than they would in traditional DB plans, which heavily backload benefits in the last several years prior to normal retirement age.

Table 1. Comparison of DB, Cash Balance, and 401(k) Plans

Plan Feature	Traditional Defined Benefit	Cash Balance	401(k)
Individual accounts	No	Yes (notional accounts)	Yes
Automatic enrollment	Yes	Yes	Sometimes
Employee contributes	No (a few exceptions)	No	Yes
Employer contributes	Yes	Yes	Generally
Employer manages assets	Yes	Yes	No
Employee receives periodic statements of accrued benefits or account balance	No	Yes	Yes
Benefits based on earnings over entire career	Sometimes	Yes	Yes
Employee bears investment risk	No	Sometimes	Yes
Insured by PBGC	Yes	Yes	No
Readily portable	Usually not	Yes	Yes
Vesting period up to five years	Yes	Yes	Yes (employer contrib.)
Wearaway (period of no benefit accrual)	Rarely	Sometimes	No
Annuitization must be an option	Yes	Yes	No
Pre-retirement lump sum benefits	Sometimes	Yes	Yes

Source: Authors' compilation.

Provides higher benefits to mobile workers. One of the touted advantages of the cash balance plan formula is the ability to provide greater and more portable benefits to shorter-term employees. As a result, like 401(k) plans, cash balance plans are more attractive to workers who change jobs frequently than are DB plans (Gale et al. 1999).

Vested workers who leave firms with a cash balance plan before qualifying for retirement do not give up back-loaded benefits as they would with traditional DB plans. Workers who switch jobs several times during a career can take their cash balance benefits with them when they leave their employers.

Provides a lump sum distribution option to all workers. Some workers like cash balance plans because, like 401(k) plans, these plans allow benefits to be taken as a lump sum distribution (LSD) before and at normal retirement age.[2] Although this is a potentially positive feature of

[2] All cash balance plans must offer employees annuitization as the default option.

cash balance plans from the perspective of some workers, the reality for retirement security is more complex. Cash balance lump sum amounts can be spent rather than saved for retirement purposes. This may leave workers worse off than their counterparts with traditional DB plans, many of whom cannot cash out their pensions.

Studies have indicated that about two-thirds of workers who receive LSDs from pension plans do not roll over the entire amount to another retirement vehicle. Those accounts that are entirely rolled over comprise 59 percent of the dollars distributed as lump sum distributions (Purcell 2003). Younger workers are among those least likely to fully roll over their LSDs. This is not a problem restricted to cash balance plans—401(k)-type plans suffer from the same problem of "leakage" from the pension system.

Problems with Cash Balance Plans

Conversions. Critics argue that the conversion of traditional DB plans to cash balance plans uses the voluntary pension system to undermine the expectations of employees. It does so by allowing employers to change from existing plans that promised future retirement benefits that employees expected when they were hired to plans that are less generous.

Although employers may amend their pension plans to reduce the rate at which future benefits are earned (or eliminate future benefits accruals), employers are prohibited from reducing the benefits that employees have already earned.[3] For this reason, a conversion from a DB plan to a cash balance plan cannot cut a worker's accrued benefits. Having worked for years under one plan design—a design that promised higher benefits at the end of one's career in return for smaller benefits up front—employees may be suddenly faced with a very different pension package. This problem is exacerbated by the fact that employees may have made employment or retirement planning decisions based upon expected benefits as promised in the plan's benefit formula and plan documents at the time he or she was hired.

Cash balance plans, especially when they result from converted traditional DB plans, can significantly affect the future retirement income security of older workers. Specifically, cash balance plan conversions can include "wearaway" provisions.

"Wearaway"means no new benefit accrual. In the transition from traditional DB plans to cash balance plans, younger workers will typically do better than they would under traditional DB plans because, as discussed earlier, the accrual pattern will give them larger benefits when they are young. Older workers with more years of service in DB plans may not do as well. They may, in fact, face significant reductions in future benefits accruals after a conversion. A key reason is the prevalence of "wearaway" provisions in many conversions.

"Wearaway" provisions are one of the most controversial features of cash balance plans. Critics argue that the wearaway represents precisely the form of age discrimination that the 1986 pension accrual amendments were intended to outlaw—older workers failing to earn additional benefit accruals despite continued employment.[4] The wearaway provision does not take away earned benefits, i.e., the legally accrued benefit under the previous plan. A wearaway provision is a

---

[3] This is the anti-cutback rule, or the prohibition under pension laws against reducing any previously accrued benefits. This includes early retirement benefits that an employee is eligible to receive.

[4] The Age Discrimination in Employment Act (ADEA) and companion sections in the Internal Revenue Code (IRC) and ERISA prohibit the reduction in (or cessation of) benefit accruals that occur based on age (AARP 2000).

period of time during which the worker accrues no new benefits. This provision can significantly limit the accrual of future benefits.

Specifically, when a traditional DB plan formula is changed to a cash balance formula, the benefit earned by a specific individual at a point in time under the old DB formula may exceed the amount determined to be the new benefit under the cash balance formula. A wearaway means employees (particularly older, longer-service employees) might not earn any additional benefits until the benefits under the cash balance plan formula catch up to the benefits earned under the original DB plan formula. During this "catch-up" period, the employee would accrue no new benefits (AARP 2000). Further, some workers may not accrue additional benefits for a lengthy time period. It may take many years to catch up to the benefits already earned under the old plan formula.

In addition, there is tremendous uncertainty in the length of the wearaway period. The wearaway period can be significantly influenced by changing interest rates and the initial amount the plan allocates to the worker's cash balance account. A lower interest rate yields a higher present value of benefits from the old DB plan and thus a longer wearaway period because that increases the difference between the value of the old plan and the value of the new plan. A lower interest credit rate and pay credit rate also increase the length of the wearaway period because they reduce the accrual rate in the cash balance account. As seen in Figure 1, the length of the wearaway period decreases with increases in the interest rate. Federal laws regulate benefit accruals, including age discrimination prohibitions. Although salary and length of service may be components in determining the length of the wearaway period, all else being equal, age appears to be the primary determining factor in the amount of the wearaway (AARP 2000).

Accrual Rate and Age Discrimination. Most traditional DB plans are based on a "terminal earnings" or "final average pay" formula, i.e., a benefit formula of years of service multiplied by a percentage of final pay. Employers promise to pay a specified annual pension benefit at retirement.[5] In the early years of participation in the traditional DB plan, an employee accrues small benefits in return for the promise of greater benefits as tenure with the company increases. As such, the benefits in most traditional DB plans are significantly back-loaded, i.e., a large percentage of total benefits are accrued at the end of an employee's career. Table 2 shows this pattern for a hypothetical traditional DB plan and compares that to a hypothetical cash balance plan. In this example, the DB plan is more generous after age 40 than the cash balance plan but less generous at earlier ages.

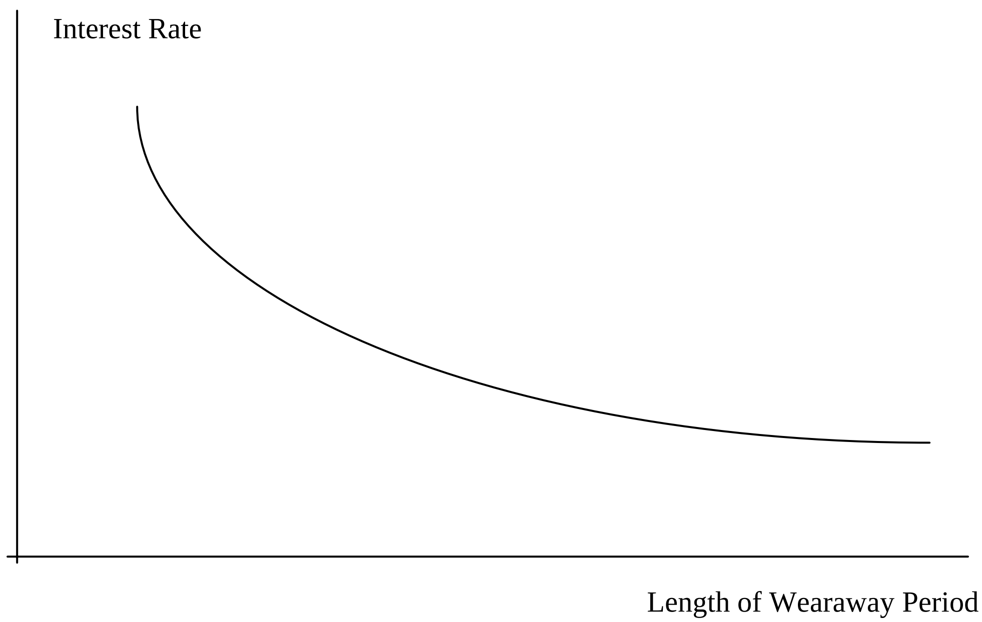
Even if the problem of age discrimination in conversions due to wearaway is resolved, another issue remains—the problem of inherent age discrimination in cash balance plans. The issue of inherent age discrimination in cash benefit plans depends on the measurement of benefit accruals, as defined for legal purposes under the Employee Retirement Income Security Act (ERISA). Because cash balance plans are categorized as DB plans, pension law requires that benefit accrual in cash balance plans be measured as the increase in the benefit receivable at normal retirement age, typically age 65, including the interest accrual for all years up to age 65. This measure of accrual differs from the accrual actually received by workers who change jobs at short job tenure.

---

[5] More than half of all participants in DB plans have a terminal earnings formula for determining benefits. Over one-third of those with terminal earnings formulas received a flat percentage of terminal earnings per year of service (BLS 1999).

To understand the calculation of benefits and the measurement of benefit accruals in cash balance plans, consider two workers identical in all respects except for age—one is age 25 and the other is age 35. Both workers earn $50,000 a year and both participate in a cash balance plan that provides age-neutral credits of 5 percent of pay and a 5 percent annual interest credit. Both workers work for one year, then change jobs and withdraw the amount in their cash balance plan account. To keep the example simple, assume that vesting is immediate and that the 5 percent pay credit is made into the workers' accounts and the 5 percent interest credit are paid into their accounts at year's end. Thus, after participating one year, each worker receives $2,500 at the end of the year. This amount represents the accrual to workers who change jobs after short tenure. Similarly, if both workers worked two or more years, they would both receive the same amount from their accounts so long as they worked the same number of years and took the money out of their account when they quit working.

Figure 1: Length of Wearaway Period



Source: Authors" Compilation

Consider again the two workers described earlier. As defined by ERISA, the legal definition of benefit accrual for the worker age 25 is the $2,500 calculated earlier plus all future projected accruals of interest up to the plan's normal retirement age—i.e., age 65. Similarly, for the worker age 35, the benefit accrual would include all future projected interest accruals up to age 65. The benefit accrual of an older worker would be less than that of a younger worker because there would be ten fewer years of future interest credits counted in the benefit accrual.

To demonstrate the concept relative to a base case, we calculate, as a benchmark benefit, accruals for workers earning $50,000 with a 5 percent interest accrual rate. For the 25-year-old, the benefit at age 65 would be the benefit calculated above ($2,500) multiplied by a factor of 7.04, which is the future value of $1 invested at 5 percent for 40 years. That would total $17,600, which equals 35 percent of that worker's wage income at age 25. For the 35-year-old, the benefit accrual would equal the same benefit ($2,500) multiplied by a factor of 4.32, which is the future value of $1 invested at 5 percent for 30 years. That would total $10,800, which equals almost 22 percent of that worker's wage income at age 35. Thus, measured this way, the benefit accrual equals 35 percent of the wage income of the worker age 25, which is 13 percentage points higher than the benefit accrual relative to wages for a similar worker age 35. When benefit accruals are calculated this way, cash balance plans are considered to be age discriminatory.

To produce a plan that was age neutral by this definition would require the wage crediting rate to differ for each age. Given a 5 percent interest crediting rate, if the wage crediting rate were 5 percent at age 45, then the wage crediting rate would need to be 1.88 percent at age 25 but 8.13 percent at age 55 for the accruals to be the same at each age. These wage crediting rates that produce equal benefits at age 65 would change if the interest rate changed.

Figure 2 shows how cash balance plan benefits accrue in comparison to the accrual of traditional DB plan benefits when cash balance accrual is measured as though the plan were a DC plan (Elliott and Moore 2000). A smooth or constant benefit accrual pattern means that younger workers, with short tenure, typically fare better than they would under a traditional DB plan. This occurs because a cash balance plan will provide them with a larger benefit if they happen to leave their current employer prior to retirement. Older workers with long years of service and a traditional DB plan will not do as well if they leave their employer prior to the normal retirement age.

Why Employers Have Switched to Cash Balance Plans

One reason employers have converted their traditional DB plans to cash balance plans is that cash balance plans may help employers attract and retain workers in a mobile environment. Also, they will help employers recruit new younger workers by providing them with higher pension benefit accruals earlier in their careers. In addition, cash balance plans can help the employer ascertain and limit future liability and reduce pension-related expenses because these plans are unaffected by future growth in life expectancy to the extent that workers take lump sum benefits.

Employers also want to avoid the reversion tax. The reversion tax is imposed when employers with overfunded DB plans terminate those plans. If employers terminate their DB plans—whether or not they replace the plan with a DC plan or another DB plan—they have to satisfy the Pension Benefit Guaranty Corporation's termination procedures and include in corporate income the amount of plan assets that they recovered from the plan (known as the "employer reversion"). In addition, employers have to pay at least a 20 percent (up to a maximum of 50 percent) excise tax on these reverted assets. Therefore, employers often choose to convert to a cash balance plan, which requires only a plan amendment, instead of terminating and setting up a DC plan that may trigger a reversion excise tax. By converting to a cash balance plan, employers avoid these taxes, while at the same time providing a plan that looks to employees like a DC plan.[6]

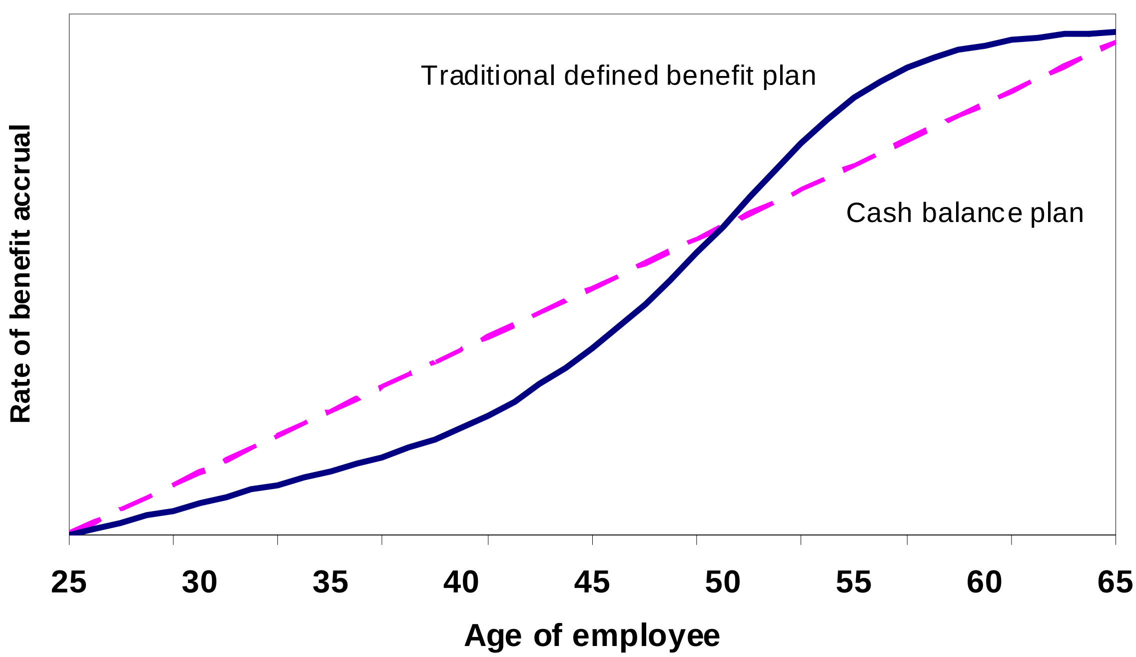
Many employers are seeing their pension obligations increase substantially as baby boomers age and are eligible for early retirement subsidies under traditional DB plans. Converting to a cash balance plan rather than terminating a traditional DB plan and establishing a new cash balance plan allows employers to eliminate these early retirement subsidies (e.g., the age and service requirements for retirement prior to the normal retirement age) that can often be accomplished by changing the ongoing DB plan.

[6] There is some evidence that the likelihood of a cash balance conversion increases when the plan is overfunded and that the avoidance of excise taxes is an important motivation for conversion (Niehaus and Yu 2001).

Table 2. Comparison of Benefit Accruals from a Hypothetical DB Plan and a Hypothetical Cash Balance Plan					
		Present Value of DB Benefit or of Account Balance		Monthly Annuity Starting at Age 65	
Age	Annual Salary	Traditional DB Plan	Cash Balance Plan	Traditional DB 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: Purcell, 2003 Estimates prepared by the Congressional Research Service					

Figure 2

An example of how hypothetical traditional defined benefit and cash balance pension plans build value over an employee's career



Source: Elliott and Moore, 2000

What Can Employers Do to Mitigate the Negative Financial Impact of Conversions to Cash Balance Plans?

The disadvantages to older employees of converting to a cash balance plan may be offset with several transition techniques available to employers. As noted, for many older, long-tenured workers, the conversion to a cash balance plan can be extremely detrimental unless there is some kind of "transition relief" offered by the employer (e.g., "grandfathering" employees in the old plan so that the benefit reductions are mitigated or avoided). Transition relief options include keeping employees above a certain age in the old plan; keeping all employees at the time of conversion in the old plan (or doing so for a fixed number of years); giving employees the option of staying in the old plan or going into the cash balance plan; guaranteeing the greater of the benefits in the old and new plans; increasing the opening balance in the individual's account at the time of conversion; granting enhanced pay or salary credits to older workers; or using a combination of these options. Also, employers could add a DC plan or increase their contributions to an existing DC plan (Niehaus and Yu 2001, Watson Wyatt 2004).

Conclusions

Cash balance plans have grown dramatically during a time that other types of DB plans have declined. Their popularity with some workers may arise in part because these plans are similar to DC plans in some important ways. Like DC plans, cash balance plans have an account balance that is easy for workers to understand, and they typically pay benefits as a lump sum rather than as an annuity at retirement, even though an annuity is the default option. Cash balance plans are more portable, and short-tenure workers accrue benefits in them more rapidly than in traditional DB plans. Cash balance plans do not contain the incentives for retirement, including those for early retirement, that traditional DB plans typically have. However, cash balance plan conversions have often involved wearaways when benefits, as calculated under the cash balance plan, are lower than those under the former DB plan. Wearaways are disadvantageous to older workers. This feature of conversions may cause older workers to forego accrual of any new benefits for a number of years. To prevent certain abusive actions by employers, cash balance plan policies are needed that promote retirement income security for older workers.

References

AARP (2000), "Cash Balance Plans and Conversions" (February 24), Letter to the Internal Revenue Service, Washington, D.C.

AARP Bulletin (1999), "Cash-Balance Pensions: Scrambling the Nest Egg," Vol. 40, No. 7 28 (July-August).

Cahill, Kevin E. and Mauricio Soto (2003), "How Do Cash Balance Plans Affect the Pension Landscape?" *Issue In Brief*, No. 14, Center for Retirement Research at Boston College, December.

Clark, Robert L. and Sylvester J. Schieber (2002), "Taking the Subsidy Out of Early Retirement: Converting to Hybrid Pensions," in *Innovations in Retirement Financing*, edited by Olivia S. Mitchell, Zvi Bodie, P. Brett Hammond, and Stephen Zeldes, University of Pennsylvania Press, pp. 149-174.

Coronado, Julia Lynn and Philip C. Copeland (2003), "Cash Balance Pension Plan Conversions and the New Economy." Unpublished paper, November.

Elliott, Kenneth R. and James Moore, Jr. (2000), "Cash Balance Pension Plans: The New Wave," *Compensation and Working Conditions*, (Summer).

Federal Reserve Board. "Federal Reserve Statistical Release." May 31, 2005. http://www.federalreserve.gov/releases/h15/data/a/tcm20y.txt. Downloaded June 2, 2005.

Gale, Steve, Leslie Papke and Jack VanDerhei (1999), "Understanding the Shift Toward Defined Contribution Plans" paper prepared for a conference titled "ERISA After 25 years: A Framework for Evaluating Pension Reform," (September).

Green, L. Bernard. (2003), "Questions and Answers on Cash Balance Plans." U.S. Department of Labor, Bureau of Labor Statistics, Compensation and Working Conditions Online. Originally posted September 22, 2003. Downloaded September 9, 2005. http://www.bls.gov/opub/cwc/cm20030917ar01p1.htm

Niehaus, Greg and Tong Yu (2001), "Cash Balance Plans Conversions: An Implicit Contract Perspective," paper presented at the Current Pension Policy Issues Conference, Miami University, Oxford, Ohio, June 8-9.

Pension Benefit Guaranty Corporation. Pension Insurance Data Book 2004, Number 9, Spring 2005.

Purcell, Patrick J. (2003), *Pension Issues: Lump-Sum Distributions and Retirement Income Security*, CRS Report for Congress (Washington, DC: Congressional Research Service, Library of Congress) (Updated June 30, 2003).

Watson Wyatt Worldwide (2004), *Hybrid Pension Conversions Post-1999: Meeting the Needs of a Mobile Workforce*. Watson Wyatt Research Study.

U.S. Department of Labor, Pension and Welfare Benefits Administration (2002), *Private Pension Plan Bulletin: Abstract of 1998, Form 5500 Annual Reports*, No. 11, Winter.

Written by Jules H. Lichtenstein and John Turner
AARP Public Policy Institute
601 E Street, NW
Washington, DC 20049
202-434-3870; E-Mail: ppi@aarp.org
October 2005