

#2003-03  
March 2003

**Pension Portability-  
Is this Europe's Future?  
An Analysis of the United States as a Test Case**

by  
**John Turner**

The AARP Public Policy Institute, formed in 1985, is part of the Policy and Strategy Group at AARP. One of the missions of the Institute is to foster research and analysis on public policy issues of importance to mid-life and older Americans. This publication represents part of that effort.

The views expressed herein are for information, debate, and discussion, and do not necessarily represent official policies of AARP.

© 2003, AARP.

Reprinting with permission only.

AARP, 601 E Street, NW., Washington, DC 20049

<http://www.aarp.org/ppi>

## **Acknowledgments**

The author acknowledges helpful comments from John Gist, Ladan Manteghi, Amy Shannon, and Jules Lichtenstein.

## **Executive Summary**

### **Introduction**

Pension losses suffered by workers who change jobs result in reduced retirement income and can impede job change, raising concerns both for labor market equity and efficiency. Because of penalties for workers who leave a job before retirement, employer-based pensions can inhibit workers from making job changes that would otherwise be desirable for them and for the efficient functioning of the labor market.

Pension portability is the ability of workers to change jobs without losing future pension benefits. The extent to which this feature is part of a pension system depends on the particular design of the pension plans in the system, which may be affected by government regulations establishing minimum standards.

### **Purpose**

This report describes ways that pension portability for job changers has been achieved in the United States. It describes both the minimum standards mandated by law and the arrangements that some employers have made that exceed those requirements. While it indicates the most commonly used methods to achieve portability, it discusses a number of other, less commonly used methods because they are possible models for extending portability to more workers. It discusses portability for both private sector plans and plans covering government sector employees. Plans for government sector employees are subject to different pension laws from those affecting private sector plans and consequently have been able to develop different methods for achieving portability.

### **Methodology**

The report describes pension portability law and the portability arrangements that have been developed in both the private and public sectors. It analyzes the sources of portability loss and policies that can reduce that loss. While primarily focusing on the United States, the paper also compares US portability arrangements with those in Europe.

### **Main Findings**

The report finds that defined contribution plans are the main way that portability is provided in the United States. While it is more difficult to provide portability with defined benefit plans, there are several important exceptions. Portability can be provided through cash balance plans and through multiemployer plans. Single employer defined benefit plans pose the greatest challenges for providing portability. Portability losses in single employer defined benefit plans are limited in the United Kingdom and Ireland by mandatory inflation adjustments for deferred vested benefits. That policy, however, is expensive for employers, and may discourage some employers from providing defined benefit pension plans.

### **Conclusions**

In some respects, the United States may provide a relevant case study for European pension portability. European Union members' desire to facilitate labor movement between and within member states resembles the US's discussion on how to facilitate pension portability within and between the 50 states.

Pension portability is achieved most easily through defined contribution plans. It is generally difficult to achieve with traditional single employer defined benefit plans. Cash balance plans, however, provide better portability than do other single employer defined benefit plans. Multiemployer defined benefit plans allow workers to change jobs among participating firms and suffer no portability loss. Portability for single employer defined benefit plans could be improved by requiring price or wage indexing of wages used in calculating pension benefits at retirement, but that would be expensive for employers and probably would cause some employers to stop offering defined benefit plans.

Portability losses are only one aspect of the risks facing workers who participate in pensions. While portability is achieved more readily in defined contribution plans than in defined benefit plans, risks also occur in defined contribution plans with respect to investment in financial markets and conversion of account balances to annuities that do not occur in defined benefit plans. A full evaluation of a pension system would consider all aspects of risk.

**TABLE OF CONTENTS**

Executive Summary.....i

Introduction.....1

What Is Portability and Why Is It Important?.....1

Portability Issues Differ Between Defined Benefit and Defined Contribution Plans.....2

Steps to a Pension Benefit.....3

Causes of Pension Loss for Job Changers.....3

The Accrual and Transferability of Pension Benefit Rights.....5

Portability in Defined Contribution Plans.....11

Portability in Defined Benefit Plans.....12

Lost Pensions.....16

Portability Policy Options.....17

Conclusions.....18

References.....19

## **INTRODUCTION**

Pension losses suffered by workers who change jobs result in reduced retirement income and can impede job change, raising concerns both for labor market equity and efficiency. Because of penalties for workers who leave a job before retirement, employer-based pensions can inhibit workers from making job changes that would otherwise be desirable for them and for the efficient functioning of the labor market. As well as affecting job changers, pensions can penalize workers who are laid off or, especially in the case of women, must quit jobs because of family responsibilities.

Pension portability is the ability of workers to change jobs without losing future pension benefits. The extent to which this feature is part of a pension system depends on the particular design of the pension plans in the system, which may be affected by government regulations establishing minimum standards.

This report describes ways that pension portability for job changers has been achieved in the United States. It describes both the minimum standards mandated by law and the arrangements that some employers have made that exceed those requirements. While it indicates the most commonly used methods to achieve portability, it discusses a number of other, less commonly used methods because they are possible models for extending portability to more workers. It discusses portability for both private sector plans and plans covering government sector employees. Plans for government sector employees are subject to different pension laws from those affecting private sector plans and consequently have been able to develop different methods for achieving portability. While primarily focusing on the United States, the paper also compares US portability arrangements with those in Europe.

Portability losses are only one aspect of the risks facing workers who participate in pensions. Risks also occur for workers in defined contribution plans with respect to investment in financial markets and conversion of account balances to annuities. Full evaluation of a pension system should consider all aspects of risk.

## **WHAT IS PORTABILITY AND WHY IS IT IMPORTANT?**

Pension portability has traditionally been considered to be the ability of a worker to carry a pension from one pension plan to another. More recently, policy analysts have expanded its meaning to include the ability of workers to preserve the value of pension benefits at job change. The US Bureau of Labor Statistics defines portability in the context of defined benefit plans as “a participant’s ability to maintain and transfer accumulated pension benefits when changing jobs” (US DOL BLS 1999). This paper views portability from a broad perspective, including any aspect of pension provision that causes job changers to lose pension benefits. Thus, as well as discussing traditional portability issues, the paper analyzes the effects of job change on the loss of future tenure-based increases in pension accrual.

Two factors have made pension portability an important policy issue in the United States. The first is the relatively high level of job change by US workers. The second is the relatively modest level of their Social Security benefits, which has led US workers to rely more on employer-provided pensions than workers in most other countries.

In the United States, pension law is national: the same law applies in each of the 50 states. The uniformity of pension law across the US labor market is a fundamental feature that facilitates pension portability. For example, all pension plans that receive special tax preferences are required to be funded, which simplifies the transfer of assets across plans. Pension portability law is based on the premise that public policy concerns relating to the protection of workers' rights justify governmental establishment of minimum standards in an area that otherwise could be left to the unfettered contracting between workers and employers.

In Europe, the importance of pension portability within national labor markets varies across countries. The Netherlands is an example of a European country where portability issues have been addressed, presumably because that country's Social Security provides only a flat rate benefit and occupational pensions are relatively important. France is another example. Occupational pensions there are compulsory. It would be contradictory to the idea of a compulsory pension system to have workers who change jobs suffer pension benefit losses (Steinmeyer 2001). In some European countries, such as Italy, because Social Security is so generous, occupational pensions are relatively unimportant and pension portability is not an issue.

#### **PORTABILITY ISSUES DIFFER BETWEEN DEFINED BENEFIT AND DEFINED CONTRIBUTION PLANS**

Pension portability is largely a problem for traditional single employer defined benefit plans. For defined contribution plans, such as 401(k) plans, portability is not a serious problem. For those plans, the worker's account balance can be transferred without loss to an Individual Retirement Account or to another employer's defined contribution plan. Workers generally do not suffer portability losses in defined contribution plans once they have vested. "Vested" means that the worker has an irrevocable right to a future benefit.

Typically, workers who participate in the most common type of defined benefit plan in the United States, the single employer plan, and who leave a job before they are eligible for retirement benefits, suffer a loss in future benefits compared to the benefits they would have accrued up to that point if they had remained with the firm until retirement. There are two important exceptions, however, among types of US defined benefit plans -- cash balance plans and multiemployer plans.

Cash balance plans are hybrid plans incorporating features of both defined benefit and defined contribution plans. Under US pension law, all plans must be categorized as either defined benefit or defined contribution plans. Cash balance plans are categorized as defined benefit plans because the employer must provide a promised level of benefits. They accrue benefits in a pattern similar to defined contribution plans, which is more favorable to short term workers than the accrual pattern in traditional defined benefit plans. With a cash balance plan, each worker has an individual account to which contributions are credited and interest is credited on the account balance. However, the individual account is purely an accounting entry, and thus is considered "notional." No assets are assigned specifically to the account and the crediting interest rate is not related to the return received on assets held by the plan. The plan differs from a defined contribution plan in that the interest crediting is fixed in advance rather than being tied to the investment earnings on the underlying assets held by the plan. The rate is usually tied to

the interest rate paid on a US government Treasury security, such as the rate of return on 30-year Treasury bonds (US GAO 2000). Cash balance plans are similar in some respects to Switzerland's mandatory pension plans, where workers are paid a guaranteed rate of return on their notional individual accounts.

Multiemployer defined benefit plans are typically provided in the US private sector when one union has contracts with a number of different employers. Multiemployer plans are more common in some European countries than they are in the United States, playing an important role in the pension systems in Denmark, France, the Netherlands, and Sweden.

### **STEPS TO A PENSION BENEFIT**

To understand how portability can be achieved, it is important to understand the process by which workers accrue pension benefits that they ultimately receive at retirement. That process can be thought of as occurring in nine steps.

1. Offer – the employer offers a pension plan to at least some of its employees
2. Coverage – the worker's job is covered by the plan
3. Eligibility – the worker meets tenure, age, and hours worked requirements
4. Participation – participation of eligible workers is automatic in defined benefit plans, but frequently in defined contribution plans workers must choose to contribute in order to participate
5. Vested – the worker has met the plan's vesting requirements, which in the United States typically are based on age, job tenure, and full-time job status
6. Accruing benefits – the worker is contributing to a defined contribution plan, or the worker is accruing future benefits in a defined benefit plan. Some workers who participate in a plan are not accruing future benefits in the plan. In a defined contribution plan, this can occur if both the worker and the employer are currently not contributing to the plan.
7. Preservation of benefits at job change – the worker does not take a lump sum distribution before retirement. Often, when workers change jobs they are eligible for a lump sum distribution from their pension plan.
8. Workers who change jobs do not suffer a lost pension problem, so that they can locate their pension plan when they retire
9. The worker files a claim for a pension benefit, the employer or plan sponsor honors the claim, and the worker receives a pension benefit at retirement.

Pension portability issues arise at four of the steps: 1. eligibility, 2. participation, 3. vesting, and 4. the problem of lost pensions.

### **CAUSES OF PENSION LOSS FOR JOB CHANGERS**

To understand portability loss, it is important to understand the different ways workers lose pension benefits when they change jobs. Portability losses can be grouped into two categories: loss of real value of benefits accrued to date, and loss of the right to an increase in benefit generosity with increased job tenure. Some types of pension plans award workers with long tenure, and loss of that aspect of benefit generosity causes many workers who change jobs to have lower pension benefits at retirement than those who stay with a single employer.

Loss of Benefits Accrued to Date. First, portability loss for job changers includes the loss of pension assets due to lack of full vesting. This loss occurs in both defined benefit and defined contribution plans. When workers start participating in a pension plan, they begin accruing benefits, but they do not have full ownership right to those benefits until they have vested. If a worker leaves a job before vesting, the worker will receive no pension benefit.

The loss of benefits due to a worker failing to vest is generally relatively small in defined benefit plans because workers accrue relatively little pension benefits in their first few years of work. However, as the worker approaches the point of vesting in a plan that requires five years of covered work for vesting, the size of the portability loss grows. For young workers, the loss in benefits at retirement from the failure to vest a small account balance in a defined contribution plan can be substantial due to the growth in investment earnings over many years.

Second, portability loss includes a loss in the real value of pension benefits accrued in a defined benefit plan at the point of job change compared to the value of accrued benefits at that date if the worker were to ultimately remain in the job until retirement age. In defined benefit plans, when a worker changes jobs his pension benefit is based on his nominal earnings at the point of job change. In US defined benefit pension plans, there is no indexation for inflation between the time of job change and the time the worker starts receiving pension benefits. Thus, inflation may seriously erode the pension's real value. The higher the rate of inflation, the greater the portability loss. Portability loss tends to be highest for long term workers who change jobs a few years before they are eligible for retirement benefits. These workers have accumulated significant benefits, but they still have several years over which inflation erodes the real value of their accumulated benefits.

In the United Kingdom, pension law requires defined benefit pension plans to index the benefits of vested terminated workers for inflation up to a maximum of five percent per year (Birmingham 1990, Blake and Turner 2002). A similar requirement exists in Ireland.

A simplified view of pension benefit loss for job changers may focus only on two factors: the loss due to lack of vesting, and the loss in defined benefit plans due to the lack of inflation indexing between the point of job change and the point of commencement of benefit receipt of wages used to calculate the benefits of job leavers. Of these two factors, the lack of inflation indexing is far more significant as a source of portability loss. Ending that source of loss of pension benefits by requiring employers to price index wages used in benefit calculations would go a long ways towards eliminating portability losses in defined benefit plans, but also would be expensive for employers. In a voluntary pension system, policy changes that place added cost on employers may induce some to stop providing a pension plan.

A third aspect of portability loss not discussed in previous analyses is the problem of lost pensions and lost pensioners. When workers change jobs or leave the labor market and leave a pension benefit with a former employer, they ultimately may be unable to find that employer to claim a benefit at retirement age. This problem occurs in both defined benefit and defined contribution plans, but is more prevalent in defined benefit plans because they are less likely to provide portability (Bruce, Turner and Lee 2002). The employer may have changed location, changed names, been bought out by another firm, merged with another firm, gone bankrupt, or

simply gone out of business. Because of these changes, workers may encounter difficulties finding their pension plans to claim benefits. Similarly, an employer attempting to find a former employee may be unable to do so.

Loss of the Option to Receive Future Tenure-Based Accruals. A more complete view of portability considers several other aspects of pension benefit loss. These aspects include features that cause benefits to accrue more rapidly for long tenure workers or for workers near retirement than for short tenure workers.

First, portability loss includes the job changer's loss of the right to generous future pension accruals when pension accrual rates increase with job tenure. This feature can occur in either defined benefit or defined contribution plans. For example, the rate at which employers' match employee pension contributions for a defined contribution plan may increase with worker tenure. This feature is much more common, however, in defined benefit plans.

Second, job changers may suffer a benefit loss in a defined benefit plan because of the difference in generosity between normal and early retirement benefits. For job changers who have changed jobs, their benefits usually are calculated based on retirement at normal retirement age, rather than at early retirement age. Benefits at early retirement age often are more generous in terms of the lifetime value of benefits than those received at normal retirement age. Employers often structure benefit formulas this way to encourage workers to take early retirement. For example, a plan may specify that benefits are reduced by 6 percent per year before the normal retirement age if the worker leaves before the early retirement age, but only by 3 percent per year from the benefit receivable at the normal retirement age if the worker leaves at the early retirement age (Gustman and Steinmeier 1995).

## **THE ACCRUAL AND TRANSFERABILITY OF PENSION BENEFIT RIGHTS**

In the following sections the paper discusses portability issues relating to the accrual and transferability of benefit rights that are common to both defined contribution and defined benefit plans. It then discusses those features that primarily relate first to defined contribution plans and then defined benefit plans.

### Eligibility, Participation and Vesting

The first steps for a worker to acquire a portable benefit in either a defined benefit or defined contribution plan are eligibility, participation and vesting. Minimum government standards in these areas are the most basic aspects of government policy.

Eligibility. US pension law—the Employee Retirement Income Security Act of 1974 (ERISA)-- allows employers to exclude from eligibility all workers under age 21, all those with less than one year of service, and all those who work less than one thousand hours per year. Thus, part-time workers can be excluded permanently from eligibility.

Participation. Workers who are age 21 or older and have one year of full-time service must be permitted to participate if their employer's plan covers their position. Employers have the option, however, of choosing another rule. Under the alternative rule, ERISA allows pension plans to use a two-year service requirement before participation in the plan, but then workers

must vest after two years of tenure with the firm. Firms presumably choose the rule that minimizes their labor costs. Firms are not required to cover all their full-time employees.

Vesting. With vesting, workers in a defined benefit plan acquire a right to a nominal benefit (not indexed for inflation) that the workers retain if they change jobs. In a defined contribution plan, the workers acquire a right to their account balance.

The benefit protection provided by vesting differs greatly between defined benefit and defined contribution plans. Since account balances in defined contribution plans continue to benefit from investment experience, they generally continue to grow in real value after a worker leaves a pension plan. The reverse happens for defined benefit plans, where inflation's eroding effect on the real value of the nominal earnings used to calculate benefits causes their real value to fall.

Vesting standards for private sector pension plans, set by US pension law, establish the maximum period allowed before vesting occurs. Firms can voluntarily choose to provide vesting earlier. US pension law gives employers some flexibility in choosing how rapidly to provide full vesting. Under the standard most employers choose, workers must vest in their pension benefits within five years of participation in the plan. This rule is called cliff vesting because the employer can provide zero vesting up to five years, followed by 100 percent vesting at five years. Because the employer can require one year of tenure for participation, for employers using that participation requirement, vesting would occur after six years of tenure. Under graded vesting, the employer must provide 20 percent vesting after three years of participation, with the percentage of vesting increasing by 20 percent a year, so the employee reaches 100 percent vesting after seven years of participation. In either case, if a pension plan terminates, all employees fully vest immediately. These rules apply equally for defined benefit and defined contribution plans.

Until 1995, the maximum period for vesting was longer for multiemployer plans than for single employer plans. This discrepancy was permitted because policy analysts thought that workers were more likely to meet a relatively long vesting requirement in multiemployer plans because they could change employers without leaving the plan. In 1995, the minimum vesting period for multiemployer plans was reduced from 10 years to five, so that it is now the same as for other pension plans.

Employees accruing creditable service for vesting do so based on their working a minimum number of hours in a year. That minimum is set in pension law at no greater than 1,000 hours, which is approximately half-time work for a full year. An unusual approach to meeting this requirement is the pension plan sponsored by the American Federation of Musicians for professional musicians. In that plan, the minimum amount of work in a year to accrue a year of creditable service for vesting is based on pay received rather than hours worked because musicians often are not paid for their practice time. In that plan, musicians must earn at least \$1,500 a year to accrue a year of creditable service.

Employee contributions (both voluntary and mandatory) to their pension plans always vest immediately. If employees change jobs, they can receive refund of those contributions, but

without interest. Employee contributions are common in defined contribution plans but rare in private sector defined benefit plans in the United States because employee contributions to defined contribution plans are exempt from taxable income but contributions made to defined benefit plans are not. Some public sector defined benefit plans require employee contributions.

In a defined benefit plan that requires employee contributions, employees have two types of vesting. They are always vested in their own contributions. At the same time, they are accruing rights based on the value of their pension benefit at normal retirement age. At job change, employees will be vested in the larger of those two vested rights.

Employers often make matching contributions in 401(k) defined contribution plans. These contributions match contributions made by employees where, for example, the employer contributes up to three percent of pay when the employee contributes an equal amount. Employer matching contributions must vest within three years for cliff vesting, or with graded vesting must be 20 percent vested after two years, increasing in 20 percentage point increments up to full vesting after six years.

Defined contribution plans often provide vesting after shorter periods than required by law, while defined benefit plans generally do not. Thus, defined contribution plans tend to provide quicker vesting than defined benefit plans. The reason for this difference may be that employers tend not to use defined contribution plans as a personnel tool to encourage worker attachment to their firms, while they sometimes view defined benefit plans as serving that purpose.

The legal requirements in the ERISA pension law concerning minimum standards for eligibility, participation, vesting and cash outs do not apply to government employees. As a consequence, vesting in some government employee plans requires considerably longer periods of work. Vesting in some plans is 10 years, and in other plans it is as long as 20 years.

Some European countries require short vesting periods. Vesting occurs after nine months in Denmark, one year in Belgium, two years in Ireland and the United Kingdom, but five years in Italy (however, transferability to another fund is possible after three years if the fund has existed for more than five years). In its recent pension reform, Germany halved the maximum vesting period from ten years to five. Germany also lowered the age threshold at which vested pension rights can be acquired to 30 years. In Portugal, minimum vesting rules are not mandated, and 54 percent of pension funds do not provide vesting if a worker leaves before retirement (Commission of the European Communities 2002).

#### Transferability of Benefit Rights -- Rollovers

One advantage of pension portability is convenience. It is simpler for workers to have their pension assets in a single plan than in multiple plans, including plans from former employers. It is also more efficient for workers to have one larger pension account rather than several smaller ones. When workers bear administrative expenses for their pension accounts, such expenses may be less in total when they are able to combine their pension accounts from different employers.

A pension rollover is the transfer of pension assets from one plan to another plan. It is the transfer of funds from one pension plan or individual account to another without current income taxation to the pension participant. It allows job changers to consolidate their pension plans. Rollovers occur more commonly from defined contribution plans than from defined benefit plans. They almost always are made to defined contribution plans. Pension distributions are subject to mandatory 20 percent income tax withholding if they are not rolled over directly from one plan or individual account to another. Also, if workers cash out their pension funds before age 59 1/2, the cash out is subject to a 10 percent penalty tax.

Rollovers are voluntary. Workers voluntarily decide to make them. Firms voluntarily offer them as an option. Plans voluntarily accept them.

Portability is enhanced by the extent to which rollovers are permitted between different types of pension plans. The Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRRA) expanded the range of rollovers permitted. Formerly, the legal rules concerning rollovers did not apply uniformly to all types of pension plans. For example, some types of defined contribution plans (403(b) plans for nonprofit organizations and public education agencies and 457 plans for employees of state and local governments) could not be rolled over into a 401(k) plan. One type of defined contribution plan (457 plans) could not be rolled over into an IRA (Individual Retirement Account). Those restrictions were eliminated in 2001.

While pension plans are permitted to make and receive rollovers, they are not required to do so. In 1997, 52 percent of 401(k) plans (the most popular type of defined contribution plans) permitted rollovers or transfers from a previous employer's plan (US DOL BLS 1999). A survey of 45 retirement systems for teachers found that 29 plans accepted direct rollovers of pension money from a previous employer for individuals who had terminated from previous employment (National Council on Teacher Retirement 1999).

With a direct rollover, the job changer's pension funds are transferred from one plan or individual account to another. In some cases, a participant may want to rollover funds to an IRA, then roll over the funds plus any investment earnings from the IRA to another pension plan. If workers roll their distributions into special IRAs called conduit IRAs, they can roll the IRA assets into another employer's pension plan if that plan allows it. To retain its status as a conduit IRA, the IRA cannot be commingled with other IRA assets, and the employee can make no further contributions to it.

Alternatively, the funds can be transferred from the plan to the participant, who can then transfer them to another plan or individual account. The participant must do so within 60 days to avoid a tax penalty. The Internal Revenue Service (IRS) may waive the 60-day rollover period in events of disaster that are "beyond the reasonable control of the individual subject to the requirement." Rollovers into an IRA would be more advantageous to some workers because it is in an account that is separate from the employer. For other workers, a roll over into a 401(k) account would be better if they did not already have an IRA

Because the costs of administering pension accounts are primarily fixed costs, the administrative expense for employers to maintain small pension accounts is relatively high. For

this reason, pension law permits that even if for a worker who has vested pension benefits, the employer may unilaterally cash out a worker who is changing jobs and has a small pension account. In 2002, the de minimis rule states that if the value of the worker's pension account is less than \$5,000, the employer can give the worker who changes jobs the cash value of his or her account. This de minimis amount is not indexed for inflation, but periodically in the past Congress has raised the amount as its real value has fallen due to inflation.

Portability Across Persons. The concept of portability can be extended to include the transfer of pension benefits between different individuals. The 2001 Tax Act (EGTRRA) expanded the eligible retirement plans for rollovers for surviving spouses. A surviving spouse now has the same rollover opportunities as the participant would have enjoyed. For example, surviving spouses can now roll their deceased spouse's pension plan benefits into their own defined contribution plan if the surviving spouse's employer's plan permits it. Portability between persons could be expanded further by allowing it between same-sex partners, between parents and children, or any two persons.

A negative consequence of permitting rollovers from defined benefit plans to defined contribution plans is that survivors' benefits for surviving spouses may be eliminated. In a defined benefit plan in the United States, a joint and survivors' annuity must be an option. Furthermore, the worker must choose that unless the worker's spouse signs a notarized statement waiving his or her right to that option. When the funds are transferred to a defined contribution plan, however, survivors' benefits typically are not provided.

Portability Across National Frontiers. The concept of pension portability can be extended further to include portability across national frontiers. In this situation, portability is an issue for Social Security old-age benefits as well as for employer-provided pension benefits. The United States has entered into agreements with some other countries that provide for the portability of Social Security benefits or credits across national frontiers.

US citizens moving across frontiers but maintaining employment with the same multinational company face portability problems that depend on the country they expect to retire in and how long they expect to work outside of the United States. If they work outside the country for a relatively short time, their company probably facilitates such a move by allowing continued participation in the same pension plans of that company. If they are only temporarily residing in another country, so long as they are in the United States a sufficient portion of the year to be liable for US income taxes, the tax treatment of the pension would remain the same.

If the worker both moves across frontiers and changes employer, other issues arise. For example, relating to multiemployer plans, American clergy working in Paris may continue participating in the Methodist Church of the US plan, even though they work for a church in Paris. For workers who change countries, change employers, and are not participating in a multiemployer plan, defined contribution plans generally are the best for portability. A complex issue is the tax treatment of pension contributions in these cases.

Taxation of pension benefits is another issue of portability across national frontiers (Steinmeyer 2001). In the United States, pension benefits are generally fully taxed for retirees

with sufficiently high taxable income. Thus, a US citizen does not face an impediment in moving to another country where pension benefits also are taxed.

### Backloading of Benefits

Portability broadly means that both short tenure and long tenure workers receive pension benefits of roughly equal generosity relative to their compensation. Generosity of benefits received by short tenure workers depends on the extent to which benefits are frontloaded or backloaded. Frontloaded benefits accrue relatively more rapidly for workers beginning their careers, while backloaded benefits accrue relatively more rapidly later in one's career. To protect the benefit rights of short tenure workers, pension law limits the extent of backloading.

Defined Benefit Plans. In defined benefit plans, the extent of backloading depends on the benefit formula, but it is limited by pension law. The law specifies three different tests of which the plan must satisfy at least one. One of the tests is that the accrual rate in any future year of service may not be more than one-third higher than the accrual rate for the current year. Benefits amounts under this test may be expressed as dollar amounts or as a specified percentage of compensation. This rule must be used for all plans having a career average formula.

Plans based on final average earnings are backloaded and may yield little benefits for employees who change jobs several times during their career. These plans are backloaded because the benefits accumulate at a more rapid rate relative to compensation later in a worker's career. As workers gain more experience, one larger amount --the worker's pay, which generally grows over the career—is multiplied by another rising amount -- years worked. The multiplication in the benefit formula of two factors that are both growing with tenure yields to benefit accrual rates that increase with tenure. Plans based on career average benefit formulas result in lower portability losses because they are less dependent on final salary, but they still may result in sizable portability losses because the final average pay is not indexed for inflation occurring between job change and when the payment of retirement benefits commences.

Benefits for civilian federal government workers in the Civil Service Retirement System (CSRS) defined benefit plan provide an example of backloading with a final average pay benefit formula. They accrue to participants at the rate of 1.5 percent per year times the average of the highest three years of earnings for the first 5 years of work, 1.75 percent per year for the next five years, and 2 percent per year for all additional years (Turner and Rajnes 1999). Under this formula, a worker who has worked nine years would receive a pension based on 14.5 percent of pay. A person working one more year would receive an incremental increase in retirement benefits of 1.75 percent of pay, while a person working an additional year beyond 10 years would receive an incremental increase in retirement benefits of 2.0 percent of pay.

Cash balance plans provide greater portability than traditional defined benefit plans. Workers have a readily determinable balance in their accounts, and the value of the balance is not affected by job change. With cash balance plans, benefits generally accrue more rapidly for short tenure than is typically the case in traditional defined benefit plans. The extent to which these plans favor short tenure workers compared to other defined benefit plans, however, depends on the plans' parameters. With cash balance plans, for a given level of generosity over a full career, the greater the contribution rate and the lower the crediting rate the more favorable

is the plan to short service workers. For a given level of generosity, the higher is the crediting rate the more backloaded is the plan. Also, however, most cash balance plans provide pay credits that increase based on the participants age or service. A survey of cash balance plans provided by Fortune 1000 companies found that only 35 percent paid level pay credits for all participants, meaning that all workers received the same crediting rate relative to their compensation. For example, one plan provides annual pay credits of 3 percent for participants with 4 or fewer years of service with incremental increases up to 9 percent for participants with 25 or more years of service (US GAO 2000).

## **PORTABILITY IN DEFINED CONTRIBUTION PLANS**

In the United States, defined contribution plans are the primary vehicle for pension portability. While defined contribution plans may be criticized because they put all the investment risk on the employee, and defined benefit plans place the investment risk on the employer, defined contribution plans are generally superior to defined benefit plans when it comes to portability. Once a worker has vested in a defined contribution plan, that worker may change jobs with no loss of accrued benefits.

Defined Contribution Plans. The growing importance of defined contribution plans is improving the portability provided by the U.S. pension system. In 1998, more than twice as many workers participated in defined contribution plans than in defined benefit plans. Fourteen years earlier, in 1984, roughly equal numbers of workers participated in the two types of plans (US Department of Labor, PWBA 2002). It should be noted that these data count the number of participants in plans, with double counting of participants who are in more than one plan.

Generally, defined contribution plans provide accrual rates (as a percent of compensation) that are neutral with respect to the worker's age. Thus, benefits accrue relatively more rapidly for short tenure workers in defined contribution plans than in defined benefit plans. In some defined contribution plans, however, the employer contributes a larger share of salary for workers with long tenure, or the matching contribution increases with worker tenure, so that job changers with those plans suffer a portability loss. In 1997, 5 percent of defined contribution plans involving employee contributions had employer matching rates for employee contributions that varied by service (US DOL BLS 1999). Similarly, in some plans the nonvested benefits of job leavers are distributed among active participants in proportion to their account balance, which tends to reward longer tenure workers (Turner 1993).

Pooling assets across employers is easily achievable for defined contribution plans. Because there are generally no portability losses associated with vested assets in defined contribution plans, pooling of assets is mainly a convenience so that workers do not need to establish participation in different plans.

Pooling across employers is achieved for most university professors through the Teachers Insurance and Annuity Association and the related College Retirement Equities Fund (TIAA-CREF), which are both defined contribution plans. TIAA-CREF covers 12,000 nonprofit institutions, including government and private universities, other educational institutions, nonprofit research organizations, and some museums. In this network, university professors can

change jobs among most colleges, universities and nonprofit research institutions in the United States and maintain their defined contribution pension account with TIAA-CREF.

Individual Retirement Accounts (IRAs) are defined contribution plans that are not tied to a particular employer. When a worker changes jobs and receives a pre-retirement distribution from his or her pension plan, that distribution can be deposited into the worker's IRA without tax consequences, as long as it is done within a certain number of days after receiving the distribution, or it is sent to the IRA directly by the plan of the former employer. A large part of the assets in IRAs are due to these deposits. A difference in current law between IRAs and most other pension plans is that if a worker declares bankruptcy, IRAs are not protected from the worker's creditors, while other pension plans are protected.

### **PORTABILITY IN DEFINED BENEFIT PLANS**

Portability in defined benefit plans can be achieved three ways: 1) preserving the real value of benefits or assets within a single employer plan, 2) pooling pension assets across employers in a multiemployer plan, and 3) transferring pension assets or credited service between plans. In 1997, only 8 percent of full-time employees with a defined benefit plan who worked in medium and large private establishments were in a plan that had a portability feature of the third type, involving a transfer across plans. This percentage differs across types of workers, being 10 percent for blue collar and service employees, compared to 4 percent for professional, technical, and related employees (US DOL BLS 1999).

#### Preservation of the Real Value of Benefits or Pension Assets in a Single Employer Plan

For most single employer defined benefit plans in the United States that are not cash balance plans, workers suffer a portability loss when they change jobs. This loss occurs in part because the benefits accrued to date but received later at retirement are based on the worker's nominal earnings at the point of job change, which are not indexed for inflation between that time and the date at which the worker reaches retirement age and is eligible to collect those benefits. In a cash balance plan, by contrast, the worker has an account to which interest continues to be credited after he changes jobs.

#### Pooling Assets Across Employers in a Multiemployer Plan

Pooling assets across employers occurs when multiple employers establish a single multiemployer pension plan in which their employees may participate. Pooling pension assets across employers may help employers reduce administrative costs. This type of pooling arrangement allows workers to change jobs among employers participating in the plan without changing plans and without a portability loss. Multiemployer pension plans in the United States are predominantly defined benefit plans. They provide portability of service in that workers can change employers within the plan and their service with the different employers counts without penalty towards the accrual of retirement benefits.

Private sector multiemployer plans in the United States generally are collectively bargained (union) plans that are established as a result of a collective bargaining agreement between a union and a number of employers. They cover many occupations in one industry or one occupation in many industries. They tend to encompass a limited geographic area, such as the metropolitan area associated with a large city. In recent years, some multiemployer plans

have merged, which provides enhanced portability across jobs because more jobs are covered within a single plan. This trend may have been facilitated by developments in computer technology that have simplified the administration of plans with many different employers.

Multiemployer plans tend to develop in industries with particular characteristics. Typically, the industry has many small firms, the workers in the industry are skilled, and all of them belong to the same labor union. The industry tends to have both a high turnover of firms and a high turnover of workers across firms. In the construction industry, for example, carpenters and plumbers typically work on one project until it is completed, then work on another project with a different employer. The decline of unionism in the United States has reduced the importance of multiemployer plans; there were approximately the same number of plans in 1998 as in 1982 (U.S. DOL PWBA 2002).

An example of an industry-wide geographically based multiemployer plan is the Unified Food and Commercial Workers Fund in Northern California. The International Garment Ladies Union and the Amalgamated Clothing and Textile Workers Funds cover production workers in the needle trades. By contrast, the Sheet Metal Workers, Bricklayers, Carpenters, and other building trades funds cover particular trades in many industries (Ghilarducci 2001).

In addition to multiemployer plans where a labor union has initiated collective bargaining, there are many multiemployer plans in the government sector and in the not-for-profit sector (Ghilarducci 2001). These include plans for churches, the Red Cross and other charities. For example, the Methodist Church has a defined contribution plan for all Methodist ministers in the United States, while these ministers work for numerous local churches. State and local government plans often are multiemployer plans, covering numerous townships, counties, state government agencies, or local school districts.

Years worked for different employers participating in the same multiemployer plan all count towards vesting. Once vested, workers continue to be vested if they work for other employers within the plan. A further advantage of such pooling arrangements is that there may be economies of scale in plan administration and investment management, particularly compared to each participating employer having a separate plan. Pooling is also an advantage to small firms because it overcomes the problem of providing pension benefits that arises after the short lifespan of many small firms.

Firms must cooperate with one another in order to coordinate the establishment of a multiemployer plan. Because of this barrier among firms competing against each other in the same industry, most multiemployer plans are coordinated by a union or are in a nonprofit setting. Another disadvantage is that the arrangements are voluntary. When one firm sees itself as subsidizing other firms, it will have an incentive to leave the plan (Ghilarducci 2001).

An example of portability with a different structure from that provided by most multiemployer plans is the arrangement for musicians. Many professional musicians belong to the American Federation of Musicians, a labor union affiliated with the AFL-CIO. Musicians often work part time. They may work for a number of different employers in a year, doing short-term jobs, some not lasting more than a few hours, receiving pension contributions paid by their

different employers to the union. Thus, this pension plan provides portability for highly transient workers. In this situation, the portability feature is part of the contract provided to employers hiring musicians for union-related jobs. The monthly benefit at retirement is based on a crediting rate, which varies by age at retirement, that is applied to the total of contributions made to the plan on behalf of the worker. This type of benefit formula is unusual, but provides an alternative approach for achieving portability.

#### Transfers of Service or Assets Across Plans

Transfers across plans involve the plan the worker is leaving and the plan to which the worker is making the transfer. Transfers across plans, depending on the two plans, can include transfers of service and transfers of assets. While defined benefit plans are not required to offer a lump sum distribution that can be transferred to another plan as an option to workers who change jobs, increasingly they do so. The transfer of assets directly to another plan, instead of to the worker in the form of a lump sum distribution, is rare in defined benefit plans, affecting less than one percent of employees in private sector plans and in state and local government plans (US DOL BLS 1999, 2000).

Transfer of Service. In a defined benefit plan, benefits are generally based on the worker's years of service and earnings. Therefore, one way portability can be achieved is through the transfer of service credits from one plan to the next. With transfer of service, participants are allowed to count their years of service with a previous employer when determining benefits from a subsequent employer. For example, one plan, either a defined benefit or defined contribution plan, may recognize that a worker achieved vesting in another plan and automatically vest the worker in the new employer's plan. The employee ultimately receives benefits from both the old and new plans.

Reciprocity Agreements. Reciprocity agreements are transfer arrangements among two or more plans. Those agreements allow the transfer of benefits, service or assets among plans when the employee changes jobs (Harris 1998). In some cases, each plan counts the service in both plans when determining vested status or benefits. In other cases, plans transfer the full credit and the funds for that credit. In this way, the final employer is responsible for the full benefit. Reciprocity agreements are common among multiemployer plans covering members of local unions within the same international union, where the plans agree to give pension credit for service under any of the plans. The agreements benefit both employers and employees in the construction industry, allowing employees to move from areas where construction work is scarce to areas where it is booming. They also are common among local government plans within a state (Harris 1998).

Purchase of Service Credits in Defined Benefit Plans. A defined benefit plan may establish the rule that it recognizes the service in another plan only if the worker buys service in the new plan. If both plans are defined benefit plans and the new plan is more generous than the old one, transferring assets directly from one plan to the other would buy less service than the worker had accumulated in the old plan, but comparable benefits.

Portability through the purchase of service credits is rare in the private sector, but common among plans for state and local governments. In 1997, one percent of full-time

employees in medium and large private establishments with a defined benefit plan participated in a plan that allowed transfer of service credits (US DOL BLS 1999). By comparison, in 1998, 43 percent of full-time employees in state and local governments with a defined benefit plan participated in a plan that allowed transfer of service credits (US DOL BLS 2000). Many state and local government plans allow employees to contribute to their defined benefit plans to obtain credit for service for prior employment with another government employer. Service credits may also be purchased by having the trustee of the worker's former government plan transfer funds to the worker's new plan, but that arrangement is rare.

Frequently, plans for public school teachers allow for the purchase of service credits. Of 100 plans reviewed in one study, 87 allowed such purchases (National Education Association 2000). While many teachers' plans allow purchase of service credit for past public school teaching in another state, arrangements differ concerning what type of previous employment qualifies for a right to purchase service credit, the amount paid for the purchase, and the maximum amount of service that can be purchased. For example, some states allow a maximum of 10 years that can be purchased, and others allow purchase of credits for time served in the military or working for the federal government. Some states require the employee pay the full actuarial cost, while others charge less than full actuarial cost. Service portability can result in a retirement benefit that is close to what would have been received after lifetime employment with one employer (Harris 1998).

Workers' ability to purchase service credits in a defined benefit plan using accumulated retirement savings in a defined contribution plan is one way to make benefits portable between the two types of plans. Similarly, a government plan participant who terminated employment without sufficient tenure to vest, but was later rehired, may repay any contributions or investment earnings that were refunded earlier because of having terminated employment. Workers typically would receive a refund of their own contributions, possibly with interest, if they terminated employment before vesting. Payment may be made to that plan or another plan maintained by a state or local government employer within the same state.

Transfer of Assets Out of a Defined Benefit Pension Plan. Portability may involve the transfer of assets out of a defined benefit plan, generally as a lump sum distribution or as a roll over into a defined contribution plan.

When an employer calculates a lump sum payment or transfer from a defined benefit pension plan, US pension law requires that its value be at least the present value of the annuity if it had been taken at normal retirement age. The plan, at its discretion, can base the lump sum on a subsidized early retirement benefit, which would provide workers a larger lump sum benefit. To protect participants from plans using unfavorable assumptions that would reduce the value of their benefits, ERISA specifies discount rate and life table valuation factors in discounting retirement benefits. For distributions in 2001, ERISA established the 30-year Treasury securities' interest rate as the maximum discount rate for computing present value. For that year, ERISA also required use of the 1983 Group Annuity Mortality unisex table in present value computations. In calculating the value of a lump sum benefit, US pension law requires that the plans use the same mortality rates for both males and females, even though the actual mortality

rates for females are lower. The present value of the annuity computed using this interest rate and mortality table was the minimum that the plan could pay a participant.

While the interests of job changers need to be protected when calculating the value of their pension to be transferred to another pension plan so that the transferred amount is not too small, if the calculated benefit is too generous several negative consequences may result. First, the calculation of a generous transfer value may reduce the funding of a defined benefit plan, possibly adversely affecting the remaining participants. Second, the calculation of a generous lump sum value encourages workers to take benefits in that form rather than to take them as an annuity. Many policy analysts believe that it is generally preferable for workers to take their benefits as annuities rather than as lump sum payments because with an annuity workers are guaranteed to receive benefits for as long as they live.

In calculating the amount of assets to be transferred, defined benefit pension plans are not required to take into account future cost-of-living adjustments unless provision of those are written into the plan, which is rare, but does occur in some plans. A plan may have an unwritten policy of making ad hoc cost-of-living adjustments depending on the extent of inflation. It would not be required to take this practice into account in calculating the value of benefits for someone changing jobs.

When assets are transferred out of a defined benefit plan for a worker who has terminated, though determination of the minimum value allowable is regulated by law as discussed above, the question sometimes arises as to the appropriate calculation of the lump sum amount that the worker has accrued. A study in 2002 by the Inspector General of the U.S. Labor Department found that 22 percent of companies studied that had converted defined benefit plans to cash balance plans had given workers who had changed jobs too little in pension benefits as the result of errors in calculating how much benefits workers were owed from their cash balance plans (U.S. Department of Labor, OIG 2002). The errors occurred at least in part, however, due to complexities of cash balance plans that do not apply to other types of plans. The study found for the traditional defined benefit plans maintained by companies in the sample, there were no problems in the determination of the benefit amount to be transferred. However, it did find that in two plans the present value calculation was based on constant value annuities, although the plans specified that the benefit would increase with inflation.

Portability Network or Clearinghouse. A portability network or clearinghouse can facilitate the transfer of assets between plans. It holds pension funds and combined benefits from multiple plans. Some networks, such as the National Automobile Dealers Association, were started by employer associations. These networks cover a single industry's workers and permit service portability for workers transferring between employers in the network. Portability clearinghouses are widely used in the Netherlands to transfer deferred vested benefits in defined benefit plans (Zweekhorst 1990).

## **LOST PENSIONS**

A consequence of lack of portability is lost pensions. A lost pension occurs when workers have changed jobs without pension portability and subsequently are unable to locate their former employer to claim pension benefits. This situation may occur when the worker

moves to another city and the firm also changes location, changes name, is bought by another firm or goes out of business (Blake and Turner 2002). This problem is primarily a problem of defined benefit plans (Bruce, Turner and Lee 2002).

The lost pension problem has been largely solved for workers looking for pensions in Australia and the United Kingdom through national pension registries. The registries, however, do not solve the problem for workers who do not know they are eligible to receive a pension. Pension portability helps to resolve the problem to the extent that workers are able to maintain a single pension plan with their current employer, or to maintain an IRA. Employees can readily claim their benefits from these plans.

## **PORTABILITY POLICY OPTIONS**

The voluntary nature of the U.S. pension system constrains what government can accomplish through pension policy. With a voluntary pension system, government is limited in what costs it can impose on employers by the employers' willingness to continue offering pension plans. Thus, while it may be considered desirable from the perspective of public policy to mandate a feature that would increase the portability of pensions, if doing so causes employers to stop offering pension plans, the indirect consequences of the policy may outweigh the direct beneficial consequences. This consideration needs to be borne in mind in when considering the following policy options.

This section discusses the costs and benefits of a few of the major policy options described in the paper.

1. Reduce the vesting period to three years. This change would help short tenure workers, especially those in defined contribution plans, who could accumulate a pension from several different employers. A cost of such a policy is that after only three years of participation in a plan, workers typically have accrued only limited benefits in a defined benefit plan, so that the costs of administering small benefits may be large relative to the amount of benefits preserved.
2. Encourage development of industry-based multiemployer plans. Industry-based pensions allow workers to change jobs within their industry without changing pension plans. The usefulness of this policy, however, is limited by the extent that the workforce is unionized because these plans generally are sponsored by unions.
3. Encourage development of defined contribution plans. Portability is provided more easily through defined contribution plans than through single employer defined benefit plans. However, defined contribution plans are more risky in other respects than defined benefits plans, and so they may not be the best plans for all workers when considered in a broader context.
4. Encourage development of cash balance plans. Among defined benefit plans, cash balance plans provide better portability than single employer defined benefit plans. A policy encouraging the development of cash balance plans would need to protect the benefit rights and future benefit accruals of older workers when a traditional defined benefit plan is converted to a cash balance plan.
5. Reduce the amount of backloading permitted. This technical change would reduce the amount of benefit accrual job changers would have to forego. Reducing backloading may make pensions less useful to employers as a tool to encourage long tenure by

workers. If this feature is an important advantage to employers, reducing their ability to backload may decrease their willingness to provide pensions.

## **CONCLUSIONS**

This paper discusses ways that pension portability has been achieved in the United States by describing relevant aspects of pension law and surveying the existing portability arrangements that pension plans provide. It discusses portability for both private sector plans and those covering government sector employees.

In some respects, the United States may provide a relevant case study for European pension portability. European Union members' desire to facilitate labor movement between and within member states resembles the US's discussion on how to facilitate pension portability within and between the 50 states.

Pension portability is achieved most easily through defined contribution plans. It is generally difficult to achieve with traditional single employer defined benefit plans. Cash balance plans, however, provide better portability than do other single employer defined benefit plans. Multiemployer defined benefit plans allow workers to change jobs among participating firms and suffer no portability loss. Portability for single employer defined benefit plans could be improved by requiring price or wage indexing of wages used in calculating pension benefits at retirement, but that would be expensive for employers and probably would cause some employers to stop offering defined benefit plans.

Portability losses are only one aspect of the risks facing workers who participate in pensions. While portability is achieved more readily in defined contribution plans than in defined benefit plans, risks also occur in defined contribution plans that do not occur in defined benefit plans with respect to investment in financial markets and conversion of account balances to annuities. A full evaluation of a pension system would consider all aspects of risk.

## REFERENCES

- Birmingham, William. "Occupational and Personal Pension Provision in the United Kingdom." In Pension Policy: An International Perspective, edited by John Turner and Lorna M. Dailey. Washington, DC: United States Government Printing Office, 1990, pp. 211-228.
- Blake, David and Turner, John. "Lost Pensions, Lost Pensioners: Is a National Registry of Pension Plans the Answer?" Benefits Quarterly (Third Quarter 2002): 51 - 64.
- Bruce, Ellen A.; Turner, John; and Lee, Dongsoo. "Lost Pensions: An Empirical Investigation." AARP, unpublished, 2002.
- Commission of the European Communities. "Joint Report by the Commission and the Council on Adequate and Sustainable Pensions." Brussels, 2002.
- Ghilarducci, Teresa. "De-Linking Benefits for the Single Employer: Alternative Multiemployer Model." Presented at the Conversation on Coverage, Washington, DC, July 24-25, 2001.
- Gustman, Alan L. and Steinmeier, Thomas L. Pension Incentives and Job Mobility. Kalamazoo, MI: W.E. Upjohn Institute, 1995.
- Harris, Jennifer D. "Purchases of Service Credit: Portability for Public-Sector Employees." Public Retirement Institute, August 1998.
- National Council on Teacher Retirement. "Results of NCTR Portability Survey." August 1999. <http://www.nctr.org/content/indexpg/portanal.htm>.
- National Education Association. "Characteristics of 100 Large Public Pension Plans: With Special Emphasis on Plans Covering Education Employees." National Education Association Research, September 2000.
- Steinmeyer, Heinz-Dietrich. "Complementary Social Provisions and Mobility of Workers: "Status Questions" in Comparative and European Law." Presented at the 6<sup>th</sup> International Colloquium – European Insurance Law, Brussels December 19-20, 2001.
- Thrift Savings Plan. "Lost Participants." May 8, 2002. <http://www.tsp.gov/lostpar/index.html>.
- Turner, John. Pension Policy for a Mobile Labor Force. Kalamazoo, MI: W.E. Upjohn Institute, 1993.
- Turner, John and Rajnes, David. "Reform of Pensions for Federal Government Employees in the United States." In The Role of the State in Pension Provision: Employer, Regulator, Provider, edited by Gerard Hughes and James Stewart. Kluwer Publishing, 1999.
- U.S. Department of Labor, Bureau of Labor Statistics (US DOL BLS). "Employee Benefits in Medium and Large Private Establishments, 1997." Bulletin 2517, September 1999.

U.S. Department of Labor, Bureau of Labor Statistics (US DOL BLS). “Employee Benefits in State and Local Governments, 1998.” Bulletin 2531. December 2000.

U.S. Department of Labor, Office of Inspector General (US DOL OIG). “PWBA Needs to Improve Oversight of Cash Balance Plan Lump Sum Distributions.” March 29, 2002.

U.S. Department of Labor, Pension and Welfare Benefits Administration (US DOL PWBA). “Abstract of 1998 Form 5500 Annual Reports.” Private Pension Plan Bulletin 11 Winter 2001-2002.

US General Accounting Office (US GAO). “Cash Balance Plans: Implications for Retirement Income.” GAO/HEHS-00-207, September 2000.

Zweckhorst, Kees. “Developments in Private Pensions in the Netherlands.” In Pension Policy: An International Perspective, edited by John Turner and Lorna M. Dailey. Washington, DC: United States Government Printing Office, 1990, pp. 167-181.