

# DO OLDER WORKERS FACE GREATER RISK OF DISPLACEMENT?

BY ALICIA H. MUNNELL, STEVEN SASS, MAURICIO SOTO, AND NATALIA ZHIVAN\*

---

## Introduction

The employment of older workers into their mid-60s will be critical to ensuring that they enjoy a secure retirement. Continued employment provides current income while working, avoids the actuarial reduction in Social Security benefits, allows 401(k) accumulations to increase, and shortens the period of retirement those assets must support. One of the risks threatening the ability to work to older ages is being “displaced,” with displacement defined as the elimination of the worker’s job due to a shift in the demand for labor. Displacement can easily throw 50-year-old workers off course, disrupt their retirement saving plans, and possibly lead to premature retirement.

This *brief* explores the displacement of older workers over the period 1984-2004 using the biennial Displaced Worker Supplement to the *Current Population Survey*. The first section summarizes why continued employment is important. The second section introduces key factors that could affect displacement trends. The third section describes the *Displaced Worker Survey* and reports the raw data. The fourth section reports regression results aimed at isolating the impact of age, tenure, and other variables on the probability of being displaced. The fifth section

reports the results from a similar analysis using the *Health and Retirement Study*.

The bottom line is good news and bad news. The good news is that the data from the *Displaced Worker Surveys* show that older workers have a lower risk of displacement than younger workers, with no trend toward increasing displacement or worsening outcomes. The bad news is that the lower probability of displacement for older workers is based on the correlation between job tenure and age. Controlling for tenure, age does not protect workers from being displaced. And tenure appears to be declining, which may suggest a greater risk of displacement in the future.

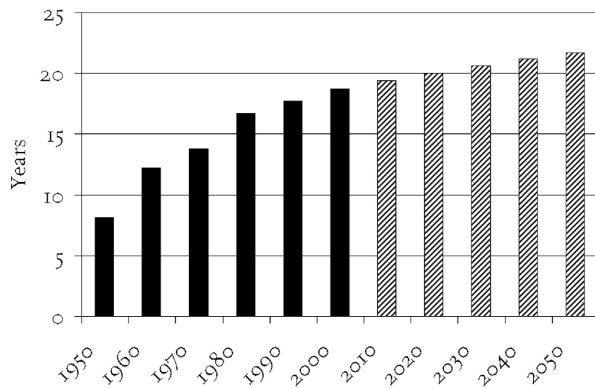
## Why Do People Have to Work Longer?

If people want to maintain their pre-retirement living standards once they stop working, they will have to work longer in the future. One reason is that the period over which people have to support themselves with accumulated retirement assets is getting longer

---

\* Alicia H. Munnell is the Director of the Center for Retirement Research at Boston College (CRR) and the Peter F. Drucker Professor in Management Sciences at Boston College’s Carroll School of Management. Steven Sass is Associate Director for Research, Mauricio Soto is a senior research associate, and Natalia Zhivan is a graduate research assistant at the CRR. This *brief* is adapted from a longer paper (Munnell, et al. 2006) that is available at [http://www.bc.edu/centers/crr/wp\\_2006-17.shtml](http://www.bc.edu/centers/crr/wp_2006-17.shtml). Robert Hutchens provided very useful comments on this paper. The authors would like to thank Madeline Zavodny for generously sharing her knowledge, experience, and files. They would also like to thank Francesca Golub-Sass and Jerilyn Libby for excellent research assistance and Kelly Haverstick for helping us untangle our equations.

FIGURE 1. RETIREMENT PERIOD<sup>a</sup> OF MALES, 1950-2050



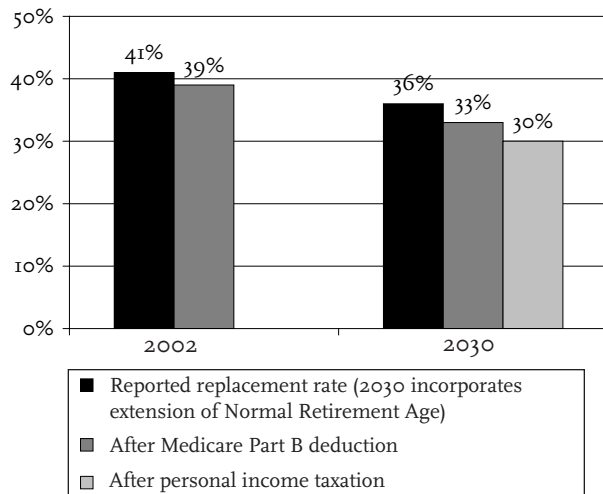
<sup>a</sup> Retirement period is the difference between the average retirement age and the average mortality age for individuals aged 65.

Sources: U.S. Bureau of the Census (1962-2005) and authors' calculations based on U.S. Social Security Administration (2006).

(see Figure 1). This extension of the retirement span initially was driven by a decline in the retirement age, but that decline halted in the mid-1980s at age 63 for men and 62 for women. Since that time, the lengthening of the retirement span has been driven solely by improvements in life expectancy — a trend that is expected to continue in the future.

At the same time that retirement spans are increasing, the retirement income system is contracting. Social Security will replace less of pre-retirement earnings in the future than it does today, due to the

FIGURE 2. SOCIAL SECURITY REPLACEMENT RATES FOR THE MEDIUM EARNER, 2002 AND 2030

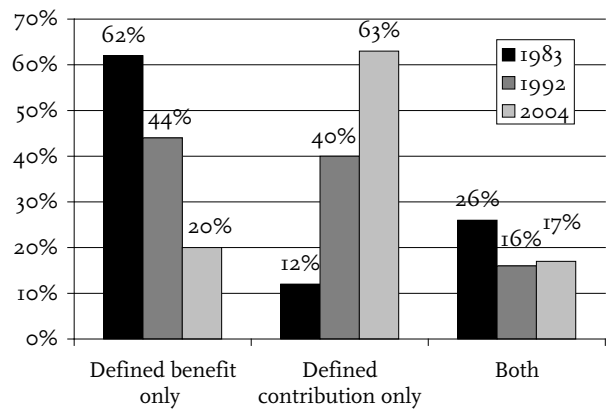


Source: Authors' calculations based on Munnell (2003).

extension of the Normal Retirement Age from 65 to 67, the deduction of Medicare premiums — which are taken out before the check goes in the mail — and the increased taxation of benefits under the personal income tax. As shown in Figure 2, the net Social Security replacement rate — benefits as a percent of pre-retirement earnings — will decline from 39 percent today for the medium earner retiring at age 65 to 30 percent in 2030.

And pension coverage in the private sector has shifted from defined benefit to defined contribution plans — primarily 401(k)s (see Figure 3). In theory, 401(k) plans could do as well or better than defined benefit plans since they are better for mobile employees. But to date, balances are modest: \$60,000 for a head of household approaching retirement.<sup>1</sup>

FIGURE 3. WORKERS WITH PENSION COVERAGE BY PENSION TYPE, SURVEY OF CONSUMER FINANCES (SCF), 1983, 1992, AND 2004

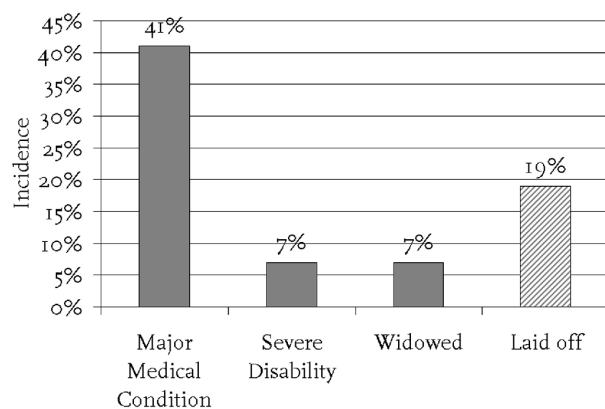


Source: Authors' calculations from the U.S. Board of Governors of the Federal Reserve System (1985, 1994, and 2006).

With an expanded retirement period and a contracting retirement income system, people will simply not have enough money to support themselves adequately. The most powerful antidote is to work a little longer to allow retirement wealth to grow and to shorten the period those assets must support.

Many people plan to continue working well into their 60s, but adverse shocks often prevent them from doing so (see Figure 4). In fact, one in five adults age 51-61 lost their jobs between 1992 and 2002. Losing a job often throws people's retirement plans completely off course and causes them to retire early. Displaced workers suffer an immediate loss of earnings, a period of unemployment, and generally a significant decline in earnings when re-employed.<sup>2</sup> Thus, it is very important to figure out whether the potential for older people to lose their jobs is increasing or decreasing.

FIGURE 4. INCIDENCE OF SELECTED PERSONAL SHOCKS, HRS, 1992–2002



Source: Johnson, et al. (2005).

## What Affects Displacement Rates for Older Workers?

The conventional wisdom is that older workers are less likely to be displaced than their younger counterparts. The theory is that when workers are young, they and their employers share the costs of acquiring skills that are particularly useful to their role at a particular firm.<sup>3</sup> When workers age, the employer enjoys the fruits of this investment because workers are more productive, and workers gain as their wages, defined benefit pension accruals, and other forms of compensation rise with tenure at the firm.<sup>4</sup> Employers are reluctant to lay off older workers because they would lose their investment and be forced to train new younger workers. Virtually every study looking at displacement rates has concluded that the probability of being displaced declines with age.<sup>5</sup>

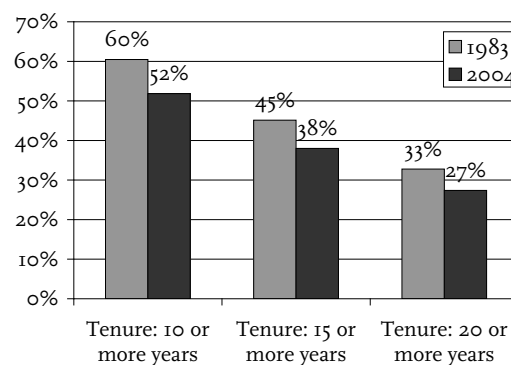
But things are changing, and some developments could lead one to think that the situation of older workers is becoming even more favorable and others that it is deteriorating.

- **Educational attainment:** Today the educational gap between younger and older workers has virtually disappeared, which would suggest that older workers are less likely to be laid off.
- **Changing career structures:** A shift away from goods to services has contributed to a move away from hierarchical structures and career employment, which suggests more displacement.

- **Shift to defined contribution plans:** The shift in the nature of pension coverage is good and bad news for older workers. The cost of defined contribution plans is not age-related so employers will not incur higher costs for employing an older worker vis-à-vis a younger worker. On the down side, the shift away from defined benefit plans represents a shift away from long-term employment commitments.
- **Aging of the baby boom:** The baby boomers are an increasing percentage of the workforce. Employers could think that they have too many older workers and may wish to rebalance the age composition of their workforce.
- **Changing patterns of tenure:** The data suggest that tenure for older workers has declined over the last two decades. To the extent that tenure has declined, older workers may be less protected.

Tenure will turn out to be an important part of the story, so Figure 5 takes a closer look at what has happened on the tenure front. Mobility and tenure may still be a controversial area, but the data suggest that people are ending their worklives with less tenure on their job. For example, among workers approaching retirement — aged 55–64 — 38 percent had been on their current job for 15 or more years in 2004, compared to 45 percent in 1983.

FIGURE 5. PERCENT OF MEN AND WOMEN AGE 55–64 WITH MORE THAN 10, 15, AND 20 YEARS OF TENURE, CPS, 1983 AND 2004



Source: Authors' calculations from U.S. Bureau of the Census (1984–2005).

## What Do the Displacement Data Show?

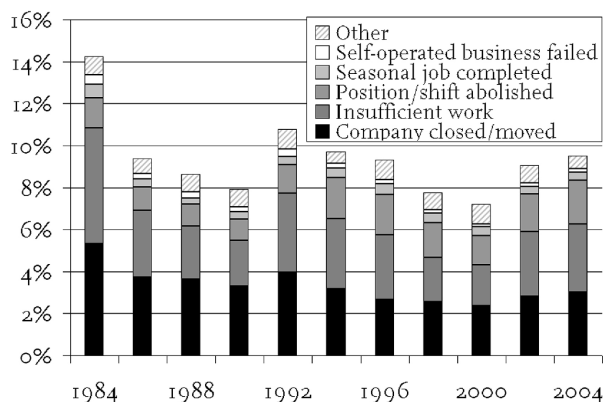
The data for this analysis come from the 1984-2004 *Displaced Worker Surveys* (DWSs).<sup>6</sup> The survey attempts to measure the number of workers who have lost their job through no fault of their own. It asks workers whether they lost their job for one of the following reasons:

- their plant or company closed down or moved;
- their company had insufficient work;
- their position or shift was abolished;
- a seasonal job was completed;
- a self-operated business failed;
- other reason.

These data, which are presented in Figure 6, do not include all job loss within the economy. First, the survey collects and reports information on only one job loss for each individual. Second, the distinction between layoffs and quits is not always clear.

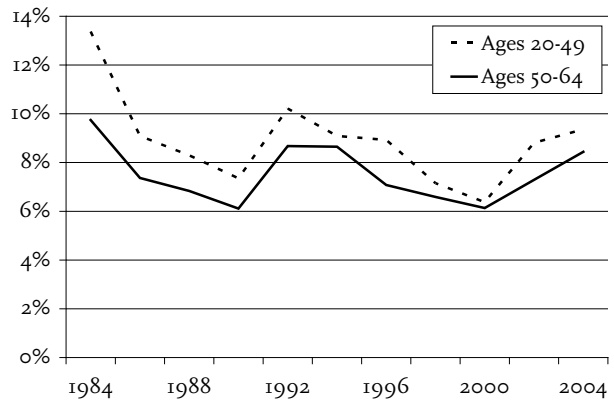
In addition, the changing characteristics of the surveys require some adjustments. First, the 1984-1992 surveys asked whether individuals were displaced during the previous five years, whereas the 1994-2004 surveys asked about displacement during the previous three years. For consistency, this analysis focuses on workers who were displaced during the previous three years.<sup>7</sup>

FIGURE 6. PERCENTAGE OF WORKERS DISPLACED BY REASON FOR DISPLACEMENT, DWS, 1984-2004



Source: Authors' calculations from U.S. Bureau of the Census (1985-2005).

FIGURE 7. DISPLACEMENT RATES BY AGE, DWS, 1984-2004



Source: Authors' calculations from U.S. Bureau of the Census (1985-2005).

Second, while surveys before 1992 asked workers in all displacement categories follow-up questions, such as what year they lost their job or their earnings on their last job, the 1994-2004 surveys followed up only with workers displaced for the first three reasons described above. Therefore, for all years, the numbers reported below include only workers in the first three categories.

Figure 7 shows the displacement rate for those aged 50-64 compared to those 20-49 for the 1984-2004 surveys. The dates refer to the year of the survey — for example 2004 — but the survey refers to workers who were displaced in the previous three years — 2001-2003. The displacement rate is the number of reported job losers over the three-year period — 2001, 2002, and 2003 — divided by the number of workers employed in the survey date, in this case 2004, plus those who had reported a job loss in the 2001-2003 period but who were not employed in 2004.

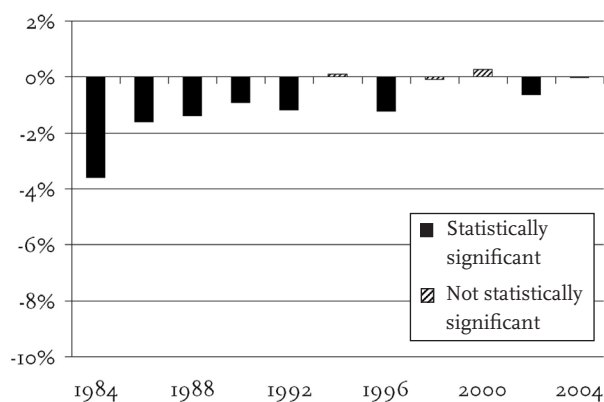
Three conclusions emerge from Figure 7. First, displacement rates are cyclical. Second, displacement rates are lower for older workers. And third, no discernible upward or downward trends are evident over the 20-year period.

## What Is the Impact of Age on Displacement?

In order to isolate the impact of age on displacement rates, it is necessary to control for the various ways in which older workers might differ from their younger counterparts. This can be done through the use of a probit regression that estimates the probability of being displaced and includes variables for gender, marital status, non-white, education, industry, and full-time status as well as age.<sup>8</sup> The dependent variable is equal to one if the worker was displaced during the three-year survey period and zero otherwise. A separate equation is estimated for each *Displaced Worker Survey* between 1984 and 2004. An additional set of equations is estimated for the 1996 and later surveys when tenure information became available for all CPS respondents.

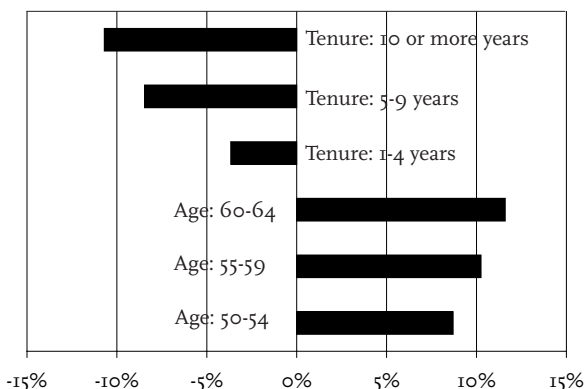
Figure 8 shows the effect of age on the probability of being displaced controlling for gender, marital status, non-white, education, industry, and full-time status. Being in the 50-64 age group reduces the probability of being displaced by somewhere between 0 percent and 2 percent. Thus, the regression appears to confirm the pattern in the raw data that older workers are less likely to be displaced than younger ones.<sup>9</sup>

FIGURE 8. PROBABILITY OF DISPLACEMENT FOR WORKERS AGE 50-64 COMPARED TO WORKERS AGE 20-49, DWS, 1984-2004



Source: Authors' calculations from U.S. Bureau of the Census (1985-2005).

FIGURE 9. EFFECT OF TENURE AND AGE ON PROBABILITY OF DISPLACEMENT FOR OLDER WORKERS, DWS, 2004



Source: Authors' calculations from U.S. Bureau of the Census (2005).

Figure 9 reports the results for the same type of equation, except this time tenure variables are included and specific age categories are used instead of two groups designating young and old workers. As noted earlier, tenure information is available for the entire workforce only for the 1996 and later surveys. Again, the equations were estimated for each survey year between 1996 and 2004. Figure 9 reports the coefficients from the 2004 equation, but all the equations are similar. The results show that tenure — not age — protected older workers from displacement. Holding tenure constant, older workers are actually more likely than their younger counterparts to be displaced.<sup>10</sup> Thus, to the extent that workers change jobs late in their careers, they are increasing their risk of displacement. These older workers lose the protection afforded by tenure and face the increased risk of displacement associated with age.

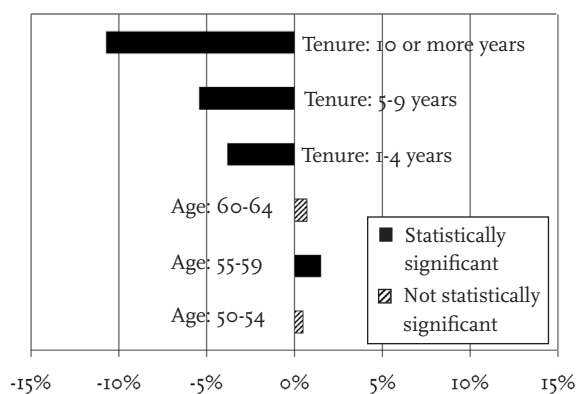
## Do Other Data Sets Show Similar Results?

To confirm that tenure, not age, is the factor protecting older workers, additional equations were estimated using the *Health and Retirement Study* (HRS). The HRS is a nationally-representative data set that began in 1992.<sup>11</sup> It contains detailed information on education, job history, health, and many other demographic and economic variables and therefore is ideal for this study.



The first equation used in this analysis estimates the probability of being displaced (not working because of a lay-off or business closure, which is treated separately from other lay-offs in the HRS). In each case, the sample consists of those who were working in a previous period. The equation includes three age groups: 50-54, 55-59, and 60-65; under 50 is the omitted group. In addition, the equation includes variables used in the *Displaced Worker Survey* regressions — gender, marital status, non-white, education, tenure, and industry, as well as establishment size (a variable not included in the DWS).

FIGURE 10. PROBABILITY OF DISPLACEMENT FOR OLDER WORKERS BY TENURE AND AGE, HRS, 1992-2004



Source: Authors' calculations from University of Michigan (1993-2005).

As in the *Displaced Worker Survey* equations, it is tenure that has a large and statistically significant effect. Tenure of ten or more years reduces the probability of displacement by more than 10 percentage points compared to tenure of less than one year (see Figure 10). Even 5-9 years of tenure reduces the displacement probability by 5 percentage points. These magnitudes are roughly the same as those found in the analysis of the *Displaced Worker Survey*.<sup>12</sup>

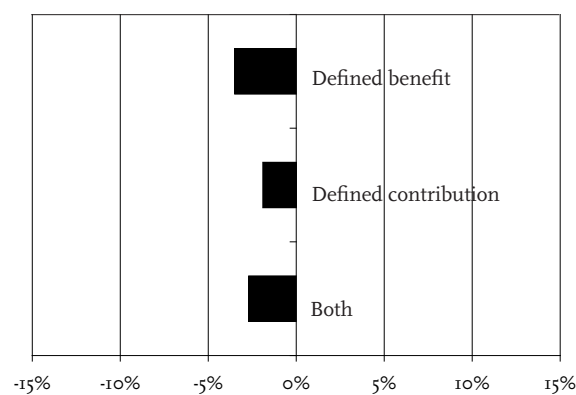
The HRS also has extensive information on pension coverage for each individual, making it possible to test the impact of pensions on the probability of displacement.<sup>13</sup> Workers with pension coverage were divided into three groups: “defined benefit only,” “defined contribution only,” or “both.” The results, as shown in Figure 11, suggest that coverage under a “defined benefit plan only” reduces the probability of displacement by about 4 percentage points, compared to about 2 percentage points for “defined contribution plan only” and about 3 percentage points for “both.”

The pension results are consistent with intuition. The thought going into the exercise was that pension coverage, and the interest it implies in employees, probably reduces the likelihood of displacement. This assumption seemed particularly likely in the case of defined benefit plans where workers are often represented by a union that might resist plant closings and other layoffs. Furthermore, defined benefit plans often contain early retirement incentives that would obviate the need to lay off older workers.

The HRS also allows an estimate of the permanent impact of displacement, which helps to refocus on why displacement is such an important topic. Surveys consistently show that people plan to stay in the labor force until age 65, but the median actual retirement age is 62.<sup>14</sup> Part of the explanation is that people get thrown off course by a negative shock. Many never recover fully. Thus, displacement seriously reduces the likelihood that older people will be employed and able to save for retirement.

To assess the impact of displacement on employment, the last HRS equation takes advantage of questions about whether the person had been displaced due to either a business closure or other reasons to estimate the impact of these events on future employment. The sample consists of those who are working when they first enter the sample — that is, people with an attachment to the labor force. In the estimated equation, the dependent variable is one if the person who was working when first observed is currently working, and zero otherwise. The results

FIGURE 11. PROBABILITY OF DISPLACEMENT BY TYPE OF PENSION PLAN, HRS, 1992-2004



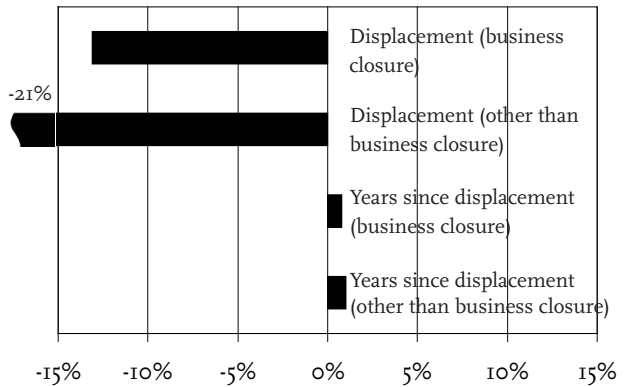
Source: Authors' calculations from University of Michigan (1993-2005).

show that, controlling for age, education, being female, married, non-white, and survey year, losing a job due to a business closure reduces the probability of working in subsequent waves by 13 percentage points and being displaced for all other reasons reduces the probability by 21 percentage points (see Figure 12). The effect does diminish over time, but only by a small amount — about one percentage point per year. Thus, being forced to leave a job has a lasting effect on the employment prospects of older people.

## Conclusion

A number of conclusions emerge from this brief summary of trends in the displacement of older workers. While workers need to work longer to achieve retirement security, job displacement of older workers has lasting negative effects on employment prospects. Fortunately, older workers have had lower displacement rates than younger workers, and displacement rates have not increased in two decades. However job tenure, not age, drives displacement trends. And declining job tenure suggests older workers could be more vulnerable in the future.

FIGURE 12. IMPACT OF DISPLACEMENT AND TIME SINCE THE EVENT ON PROBABILITY OF WORKING, HRS, 1992-2004



Source: Authors' calculations from University of Michigan (1993-2005).

## Endnotes

1 Munnell and Sundén (2006).

2 For a summary of the literature on displaced workers to 1998, see Kletzer (1998). Using the Panel Study of Income Dynamics, Polsky (1999) found that the consequences of job loss worsened between the periods 1976-81 and 1986-91.

3 Becker (1975).

4 Abraham and Farber (1987) and Altonji and Sha-kotko (1987) demonstrated a positive relationship between tenure and earnings, supposedly reflecting the acquisition of firm-specific skills. Topel (1991) challenged these results, arguing that it was unclear whether the relationship reflected the acquisition of firm-specific skills or simply that high-wage jobs survive or that more productive people change jobs less frequently, both of which would produce a positive relationship between tenure and wages. Correcting for these possible biases and using the first 16 waves of the Panel Study of Income Dynamics, Topel estimated that 10 years of seniority raises the wages of the typical male worker by 25 percent over what he could earn elsewhere.

5 Farber (1993, 1997a, 1997b, 2003, and 2005), using the *Displaced Worker Surveys* (DWSs), showed that the probability of displacement declines with age when looking at men and women together. Boisjoly, Duncan, and Smeeding (1998), using the Panel Study of Income Dynamics, found that the likelihood of involuntary joblessness for men with the same level of education is higher among younger men than among those over 50. Rodriguez and Zavodny (2000 and 2003) using the DWSs from 1984-1998 show that the probability of displacement decreases with age.

6 The *Displaced Workers Survey* was conducted as part of the January *Current Population Survey* (CPS) in 1984, 1986, 1988, 1992, 2002, and 2004 and the February CPS in 1994, 1996, 1998, and 2000.

7 The adjustments are made following Farber (1997a).

8 The analysis is limited to displacement because of plant closure, position abolished, or slack work. Using a more detailed set of 56 industry dummy variables instead of the set of private goods sector, private service sector, and public sector dummy variables had

little effect on the coefficient estimates and standard errors for all other explanatory variables in the regressions.

9 As in earlier studies, women, married people, and those working full time have a low probability of displacement, and race appears to have no impact. Private sector workers in goods-producing industries have a higher probability of displacement than those in private sector service industries. In contrast, public sector employees have a much lower likelihood of displacement than their private sector counterparts.

10 Over the 1996-2004 DWSs, displacement rates averaged 16.5 percent for those with 0-1 years of tenure; 11.9 percent with 1-4 years; 5.9 percent with 5-9 years; and 4.4 percent with 10 or more years.

11 The original HRS survey interviewed people age 51-61 and their spouses (regardless of age), with about 12,650 individuals from about 7,600 households. Children of the Depression (1923-1930) and War Babies (1942-1947) were added in 1998, bringing the total sample to more than 22,000. The survey was re-administered in 1994, 1996, 1998, 2000, 2002, and 2004. The HRS is conducted by the Institute for Social Research (ISR) at the University of Michigan and is made possible by funding from the National Institute on Aging. See Juster and Suzman (1995) for a detailed overview of the survey. Additional information is available at the ISR website: <http://hrsonline.isr.umich.edu/>.

12 The coefficients of many of the other variables in the equation also are consistent with those in the DWS regressions. Being female or married reduces the likelihood of being displaced. Having a college education reduces the probability of displacement by a small amount — 2 percentage points — which is also consistent with the DWS results. Being non-white appears to have no effect on the probability of displacement for the HRS population, whereas it alternates between no effect and a slightly positive effect on displacement in the DWS regressions.

13 The January and February CPSs which form the basis for the DWS analysis do not have pension data, so we tried imputing coverage from the March CPS, but it was unsuccessful.

14 Employee Benefit Research Institute (1996-2006).



## References

- Abraham, Katherine G. and Henry S. Farber. 1987. "Job Duration, Seniority, and Earnings." *American Economic Review*. 77(3): 278-297.
- Altonji, Joseph, and Robert Shakotko. 1987. "Do Wages Rise with Job Seniority?" *Review of Economic Studies*. 54(4): 437-459.
- Becker, Gary. 1975. *Human Capital*. New York: Columbia University Press.
- Boisjoly, Johanne, Greg J. Duncan, and Timothy Smeeding. 1998. "The Shifting Incidence of Involuntary Job Losses from 1968 to 1992." *Industrial Relations* 37(April): 207-31.
- Employee Benefit Research Institute. 1996-2006. *Retirement Confidence Survey*. Washington, DC.
- Farber, Henry S. 1993. "The Incidence and Costs of Job Loss: 1982-91." *Brookings Papers on Economic Activity: Microeconomics*, No. 1: 73-119.
- . 1997a. "The Changing Face of Job Loss in the United States, 1981-1995." *Brookings Papers on Economic Activity: Microeconomics*, No. 360: 55-128.
- . 1997b. "Trends in Long-Term Employment in the United States, 1979-1996" *Working Paper 384, Industrial Relations Section*. Princeton, NJ: Princeton University.
- . 2003. "Job Loss in the United States, 1981-2001." *Working Paper 471, Industrial Relations Section*. Princeton, NJ: Princeton University.
- . 2005. "What Do We Know about Job Loss in the United States, 1984-2004?" *Working Paper 498, Industrial Relations Section*. Princeton, NJ: Princeton University.
- Johnson, Richard W., Gordon B.T. Mermin, and Cori E. Uccello. 2006. "How Secure Are Retirement Nest Eggs." *Issue in Brief 45*. Chestnut Hill, MA: Center for Retirement Research at Boston College.
- Juster, F.T. and R. Suzman. 1995. "The Health and Retirement Study: An Overview." HRS Working Papers Series #94-1001; *Journal of Human Resources*, 1995 Supplement (JHR 30-S).
- Kletzer, Lori G. 1998. "Job Displacement." *Journal of Economic Perspectives* 12 (Winter): 115-36.
- Munnell, Alicia H. and Annika Sundén. 2006. "401(k) Plans Are Still Coming Up Short." *Issue in Brief 43*. Chestnut Hill, MA: Center for Retirement Research at Boston College.
- Munnell, Alicia H., Steven Sass, Mauricio Soto, and Natalia Zhivan. 2006. "Has the Displacement of Older Workers Increased?" *Working Paper 2006-17*. Chestnut Hill, MA: Center for Retirement Research at Boston College.
- Munnell, Alicia H. 2003. "The Declining Role of Social Security." *Just the Facts on Retirement Issues* 6. Chestnut Hill, MA: Center for Retirement Research at Boston College.
- Polsky, Daniel. 1999. "Changing Consequences of Job Separation in the United States." *Industrial and Labor Relations Review* 52 (July): 565-80.
- Rodriguez, Daniel and Madeline Zavodny. 2000. "Are Displaced Workers Finished at Forty?" *Economic Review*. Federal Reserve Bank of Atlanta. Second Quarter: 33-47.
- . 2003. "Changes in the Age and Education Profile of Displaced Workers." *Industrial and Labor Relations Review*. 56(3): 498-510.
- Topel, Robert. 1991. "Specific Capital, Mobility, and Wages: Wages Rise with Job Seniority." *Journal of Political Economy* 99 (February): 145-76.
- University of Michigan. 1993-2005. *Health and Retirement Study*. Ann Arbor, MI: Institute for Social Research.
- U.S. Board of Governors of the Federal Reserve System. 1985, 1994, and 2006. *Survey of Consumer Finances*. Washington, DC: Government Printing Office.
- U.S. Bureau of the Census. 1962-2005. *Current Population Survey*. Washington, DC: Government Printing Office.

———. 1984-2005. *Current Population Survey*. Washington, DC: Government Printing Office.

———. 1985-2005. *Displaced Workers Survey – Supplement to the Current Population Survey*. Washington, DC: Government Printing Office.

U.S. Social Security Administration. 2006. *The 2006 Annual Report of the Board of Trustees of the Federal Old Age, Survivors, and Disability Insurance Trust Funds*. Washington, DC: Government Printing Office.

## About the Center

The Center for Retirement Research at Boston College was established in 1998 through a grant from the Social Security Administration. The Center's mission is to produce first-class research and forge a strong link between the academic community and decision makers in the public and private sectors around an issue of critical importance to the nation's future.

To achieve this mission, the Center sponsors a wide variety of research projects, transmits new findings to a broad audience, trains new scholars, and broadens access to valuable data sources. Since its inception, the Center has established a reputation as an authoritative source of information on all major aspects of the retirement income debate.

## Affiliated Institutions

American Enterprise Institute  
The Brookings Institution  
Center for Strategic and International Studies  
Massachusetts Institute of Technology  
Syracuse University  
Urban Institute

## Contact Information

Center for Retirement Research  
Boston College  
258 Hammond St.  
Chestnut Hill, MA 02467-3808  
Phone: (617) 552-1762  
Fax: (617) 552-0191  
E-mail: [crr@bc.edu](mailto:crr@bc.edu)  
Website: <http://www.bc.edu/crr>