

# **How Job Displacement Affects Social Security Claiming and**

## **Work at Older Ages in the Short and Long Term\***

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**PRELIMINARY. PLEASE DO NOT QUOTE OR CIRCULATE.**

*The findings and views expressed here are those of the authors and should not be interpreted as those of the Social Security Administration or the Congressional Budget Office.*

### **Abstract**

An often-voiced concern in recessions is that unemployed older workers claim Social Security earlier than they would have in the absence of job loss, leading to lower Social Security benefits and hastening permanent withdrawal from the labor force. A separate question receiving less attention is whether workers rely on employment at older ages to make up losses in earnings from displacement. In this study, we present new estimates of how job displacement affects the age of claiming Social Security benefits for workers displaced close to retirement age and workers displaced in prime working age. Using longitudinal administrative data covering 30 years, we follow the labor supply of workers who left stable jobs in a mass layoff during the early 1980s recession. We find that workers displaced near retirement age experience a substantial decline in employment and a significant rise in the incidence of early claiming. Those early claimers see a drop in their Social Security benefit associated with substantially lower earnings after job loss in addition to the reduction for claiming early. In contrast, relative to non-displaced workers, workers displaced in middle age work about as much at older ages and claim later. Extending their working lives allows those workers to recover some of the lifetime losses in earnings. A large fraction of workers is subject to costly job loss at some point, thereby underscoring the importance of work at older ages.

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## 1. Introduction

The patterns of early retirement and early claiming of Social Security benefits in recessions typically receive substantial attention.<sup>1</sup> Retirement and claiming behavior can change in recessions for several reasons. Some unemployed older workers likely withdraw from the labor force and claim Social Security benefits early because they cannot find an acceptable job. Other older workers work longer because their wealth has declined or because they desire to offset the effect of earnings losses on retirement benefits.<sup>2</sup> Changes in early retirement or benefit claiming in recessions capture the *net* effect of those two channels but obscure the underlying dynamics of labor force participation at older ages.

Standard models of optimal retirement decisions characterize the labor supply choice of older workers who remain employed during a recession, or who can find a job at a similar wage after job loss. For example, declines in household wealth can trigger a delay in retirement. For workers laid off without the option of returning to a comparable job, the labor supply decision is more complicated. On the one hand, Social Security benefits can provide insurance against the loss in income triggered by job loss. Because reductions in Social Security benefits for early claiming are actuarially fair on a lifetime basis, for a given amount of lifetime earnings the option to claim earlier should be beneficial to those eligible. On the other hand, claiming early may reduce annual Social Security benefits relative to what benefits would have been at the optimal claiming age. As further explained below, the decision is also complicated because it depends on a worker's employment and earnings

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<sup>1</sup> Fichtner, Phillips, and Smith (2012) found that the percentage of workers claiming retirement benefits at age 62 increased more than two percentage points from 2007 to 2009.

<sup>2</sup> See Coile and Levine (2011, 2012) for an overview, and von Wachter (2007) and Hurd and Rohwedder (2010) for a discussion of different aspects of older workers' economic situation in recessions.

history as well as expected longevity. From society's point of view, the problem is complex as well; claiming Social Security benefits early may lead to an inefficient reduction in labor supply, and early retirement may lead to lower revenues from payroll and income taxes.

Evaluating labor supply and claiming choices in response to job loss near retirement age is complex, but the effect of job loss in prime working age is conceptually more straightforward. The long-term loss in earnings following job loss reduces lifetime wealth and the base on which Social Security benefits are calculated. It also leads to years with low and potentially zero earnings, again affecting the level of Social Security benefits. Hence, lower wealth and reduced Social Security benefits should delay retirement and perhaps claim age. Because many prime-age workers have limited ability to increase hours or wages, delaying retirement may represent an important opportunity to make up some of the large earnings losses following job loss. At present, little is known about the long-term effect of job loss on claiming or retirement decisions.

In this paper, we investigate how job displacement affects retirement and claiming in the short and long run. We use longitudinal administrative information on earnings and employment of workers and their employers to isolate workers displaced from stable jobs during a mass layoff in the 1982 recession. We then follow workers' employment for over 20 years and characterize claiming decisions for workers displaced at older ages and in prime working age. We also describe the effects of job displacement at different ages on Social Security benefits and of additional labor supply on lifetime earnings losses.

Others have characterized the short-term effect of job loss on labor force withdrawal of older workers.<sup>3</sup> But this paper is the first to characterize how job displacement of older

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<sup>3</sup> E.g., Chan and Stevens (2001, 2004), Coile and Levine (2012).

workers affects the claiming of Social Security benefits.<sup>4</sup> It is also the first study to characterize long-run responses of labor supply near retirement age, long-term effects on claiming decisions, and the consequences for lifetime earnings losses.

The results allow us to quantify how job displacement in recessions affects the incidence of early claiming and how much workers revise claiming plans in response to job loss. To what extent those actions are costly to workers and society, or simply represent an optimal adjustment to the career opportunities post job loss, is beyond the scope of this paper. However, our findings regarding the effect of job loss on the level of Social Security benefits indicate that job loss is not neutral for workers near retirement age.

The results also allow us to quantify to what extent delaying retirement allows workers displaced in middle age to overcome part of the large losses in earnings associated with job loss. We can then explore the value of the option to continue working at older ages to overcome the persistent effect of shocks to career earnings during working age. The value of that option demonstrates the importance of work at older ages.

The next section discusses further how the claim age affects the calculation of Social Security benefits and the resulting choice problem of the worker. The third section describes our data, sample, definition of displacement, and estimation methods. The fourth and fifth sections summarize our empirical findings, and the last section concludes.

## **2. Institutional and Conceptual Background**

A worker who loses his job through a mass layoff faces a choice: search for another job, possibly while receiving short-term income support from unemployment insurance or

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<sup>4</sup> Haaga and Johnson (2012) look at Social Security claiming in response to changes in the state unemployment rate.

other sources, or drop out of the labor force and perhaps apply for any long-term income support available. For most workers, the most likely long-term income support will come from the Social Security program—Disability Insurance benefits if the worker has severe health problems and a substantial work history, or Old-Age Insurance benefits if the worker is close to retirement age and has sufficient work history. The worker’s choice may be influenced strongly by his age when the layoff occurs and his proximity to being eligible for benefits. In this paper, we focus on take-up of Social Security retirement benefits.

## **2.1 How the Timing of Claiming Affects Social Security Benefits**

Several features of the Social Security retirement program link an individual’s annual benefit amount to the age at initial claim and therefore influence at what age a person decides to claim benefits. First, the age at which a person claims benefits determines how much of his full benefit he will receive for the rest of his life and how much of his full benefit his widow will receive after he dies. The person receives full benefits based on his average lifetime earnings—and the widow could receive those full benefits as well—only if they both wait until full retirement age (FRA) to claim benefits. If he claims between the earliest eligibility age of 62 and his FRA, his benefit will be reduced 5/9 of 1 percent for each of the first 36 months of receipt of benefits immediately preceding the FRA.<sup>5</sup> For example, in the 1980s and 1990s when the FRA was 65, a person who claimed benefits at age 62 received 80 percent of his full benefit for the rest of his life. Now that the FRA has increased to 66, a person who claims at age 62 receives a benefit that is 75 percent of his full benefit for the rest of his life. A widow claiming at the FRA would receive a reduced

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<sup>5</sup> For further information on historical changes in the calculation of Social Security benefits, see Social Security Administration (2012), Tables 2.A20 and 2.A22.

benefit as well, but not less than 82 ½ percent of the husband's full benefit. If she claims prior to the FRA, she receives a reduced benefit subject to a maximum reduction of no more than 28 ½ percent.<sup>6</sup>

In principle, that adjustment is actuarially fair for the average worker because the total amount of benefits paid out over the worker's lifetime is not affected by the age of claiming. Whether the claiming age indeed has no effect on total benefits received depends on the worker's longevity. If he expects to live longer than average, he has an incentive to claim later; if he expects to die earlier than average, he has an incentive to claim earlier.

Second, the individual's benefit amount is based on a measure of average lifetime earnings known as average indexed monthly earnings (AIME). Calculation of the AIME uses the highest 35 years of indexed earnings in employment covered by Social Security. Many workers at older ages already have 35 years of full-time earnings. But others have missing years of earnings or some number of years of low earnings among the best 35 years. Missing years of earnings could occur in the wake of job loss, and we shall see that years of low earnings often follow job displacement. Workers with disrupted work histories may want to delay benefit claiming and continue to work at older ages to boost their Social Security benefit amount.

Age at claim does not affect the indexing of previous earnings for changes in economy-wide wage growth, but working at a highly paid job in later years could influence the worker's benefit amount. All earnings prior to age 60 are indexed to average wage growth

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<sup>6</sup> The Social Security program also rewards workers who claim benefits after their full retirement age up to age 70. During most of the 1980s, the delayed retirement credit was 3 percent for each year of delay in claiming after age 65 up to age 70. The delayed retirement credit increased for people who reached age 62 in 1987 until it reached 8 percent per year for people who turned 62 in 2005 and later. Workers who are able to delay claiming their benefits until age 70 now receive benefits that are 32 percent greater than their full retirement benefit for the rest of their lives, and widow benefits are increased by any delayed retirement credit received by their husband.

in the economy. Earnings at ages 60 and above enter the benefit calculation as nominal amounts. For a worker with several years of no or very low earnings, a year of full-time earnings at age 62 or later could replace an earlier low-earnings year to raise the Social Security benefit. Once a worker claims benefits, they are indexed to cost of living increases using the Consumer Price Index measure of inflation.

## **2.2 The Workers' Decision Problem**

Following the life cycle model of labor supply, retirement, and savings behavior of French (2005), the individual will choose how much to consume, how much to work, and whether to take up Social Security benefits based on his age, the wage rate he faces, his health status, his wealth, his Social Security status, and his average lifetime earnings that determines the amount of his Social Security benefit. In the short run immediately following job displacement, a displaced worker likely faces sharply lower wages but little change in assets or AIME. If the individual is eligible to claim benefits because he is age 62 or older, he may decide to claim those benefits immediately. If the person is within a few years of reaching age 62, he may decide to stay out of the labor force and wait until he can claim at age 62.

If the waiting period prior to eligibility is too long, however, the person faces a different set of choices. Waiting until eligible to claim Social Security benefits may not be an option if the person does not have the resources to support himself and his family for many years. Those younger workers are likely to reenter the labor market but face lower wages for many years, leading to lower average lifetime earnings (AIME) as well as lower wealth. When they reach the earliest eligibility age for Social Security benefits, they may realize that claiming benefits later and working additional years would boost their Social Security

benefit by raising their AIME and avoiding some of the early claiming reductions. Working longer will also reduce the number of years during which they will draw down their wealth in retirement.

Working to older ages may be optimal for workers who were laid off during the early or middle years of their career, but not everyone is able to work past age 62. Some older people need to care for elderly relatives, have spouses who need daily assistance, or have physical or mental conditions that prevent them from working. For such individuals, working longer to compensate for layoffs earlier in their careers may not be feasible. Instead, claiming Social Security benefits at age 62 may remain the best option. But receipt of just 75 percent of their full benefit for the rest of their lives could imply hardship for the some, particularly for widows who live to be very old with only Social Security income.

Early claiming may also hurt workers laid off at older ages who chose not to reenter the workforce. A worker laid off at age 62 might decide to claim benefits immediately, but his long-term plan might have included working until age 66. He will likely draw down assets before full accumulation and start receiving lower benefit amounts from Social Security. The effect of early claiming may be a reduced standard of living throughout retirement.

### **3. Methods and Data**

The goal of the empirical analysis is to document how job displacement affects labor supply at older ages and claiming Social Security (Old-Age) benefits—both in the immediate aftermath and in the longer term after job loss. We use two regression models and longitudinal administrative data.

#### **3.1 Method of Analysis**

As a benchmark, we begin by showing results based on the standard regression model used to analyze the short- and long-term effects of job displacement on workers' earnings.

The model we estimate is

$$1) \quad y_{it} = \alpha_i + \gamma_t + \beta X_{it} + \sum \delta_k D_{it}^k + \mu_{it}, \text{ summation over } k \geq -m \text{ to } M$$

where the outcome variable  $y_{it}$  represents a measure of annual earnings or employment, the year dummies  $\gamma_t$  are identified by the presence of workers not separating from their job (the control group), and the error  $\mu_{it}$  represents truly random components affecting the outcome. The coefficients  $\delta_k$  on the dummies indicating the  $k$ -th period before, during, or after job separation ( $D_{it}^k$ ) measure the time path of earnings changes of job separators before and after a displacement relative to an initial period (in our case 8 or more years before job loss) and the control group. When employment is the outcome, we consider only the effect after job displacement (i.e.,  $k > 0$ ) because we focus on stable workers who were employed before job loss.

In a first step, we use the model to analyze the incidence of employment in any given year after job loss. Our measure of employment measures whether a worker *has any positive earnings from employment* in a given calendar year. Thus, the measure captures the effect of job loss on longer non-employment spells or on permanent withdrawal from the labor force. We cannot measure the effect on shorter spells of non-employment, changes in work hours, or non-employment dynamics within a calendar year. Such a relatively coarse earnings-based measure of employment is typical of studies of job displacement based on administrative data. However, in contrast to other studies that are often based on a subset

of U.S. states, zero earnings in our national sample is a meaningful concept containing valuable information about the employment effects of job displacement.<sup>7</sup>

We also investigate how age at displacement affects earnings and employment. We contrast findings of long-term effects of job displacement that exclude workers past age 55, as in previous studies, with studies that include employment and earnings through age 70.

To focus on how job displacement affects employment at older ages by age at displacement, we also consider a second set of regression models. The dependent variable is the incidence of employment in a given age range, say ages 62 to 64, and we keep one observation per worker. We then consider the effect of job displacement by time since layoff, or by age at displacement, which in this case is approximately the same. The regression equation we estimate is

$$2) \quad E_i^a = \theta_t + \beta X_t + \sum \phi_k D_i^k + e_i, \text{ summation over } k \geq \phi \text{ to } M$$

where  $E_i^a$  is a dummy for whether a worker has nonzero employment in a given age range,  $X_t$  is a set of control variables relating to the period before displacement, and  $\theta_t$  are coefficients on dummies for calendar year. With only one observation per person, the calendar-year dummy effectively captures the average employment rate for the control group in different birth cohorts. The coefficients  $\phi_k$  on the time-since-displacement dummies measure the effect of job loss on employment at older ages by age at layoff.

In a final step, we replicate the estimation strategy with a range of outcome variables relating to the age at claiming Old-Age benefits. We use a dummy for whether benefits are claimed before the full retirement age, the actual age at claiming, and the primary

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<sup>7</sup> If one only observes worker earnings in a single state, zero earnings in that state may mean that the worker has moved across state boundaries and is employed elsewhere.

insurance amount (PIA) at claiming. Again, the question is whether workers displaced closer to the earliest age of eligibility for Old-Age benefits (62) are more likely to claim benefits before the FRA than workers who lose their jobs at younger ages.

The comparison in equation 2 is essentially a cross-sectional comparison of labor supply at older ages and Old-Age claiming behavior between displaced workers and non-displaced workers. In the analysis of earnings, the availability of a long time series on earnings before and after displacement allows us to estimate models that include worker fixed effects, but such analysis is not possible here. Hence, we have to rely on the quality of our quasi-experiment (a sudden mass layoff at the firm level) and worker and firm characteristics observed before layoff to eliminate any pre-existing differences between the treatment and control groups.

### **3.2 Longitudinal Worker Data**

Data for our analysis of the short- and long-term consequences of job separations come from four sources—the 2004 Continuous Work History Sample (CWHS) active file, a 1 percent extract from the Master Earnings File (MEF), a 1 percent extract from the Longitudinal Employee-Employer Data (LEED), and a 1 percent extract from the Master Beneficiary Record (MBR). The 2004 CWHS gives us the baseline sample universe and basic demographic information for 1 percent of individuals covered by Social Security from 1957 to 2004. In a first step, we merge the baseline sample with information on workers' total uncapped annual earnings for each job held from 1978 through 2004, obtained from the MEF. The MEF contains not only annual earnings and an identification number for each employer (EIN) but also the industry for each job. In a second step, we complement the uncapped earnings data with information on annual earnings for each job from 1974

through 1977 from the LEED. The MBR provides information on whether workers have claimed Social Security benefits, at what date and age they claimed, and the type and amount of benefits they receive. See von Wachter, Song, and Manchester (2011) for more detailed information.

Our sample was chosen to be comparable to the seminal work of Jacobson, Lalonde, and Sullivan (1993) (henceforth JLS), who studied the effect of job loss during the early 1980s in Pennsylvania on workers in stable employment from 1974 to 1979. JLS is the benchmark in the literature that examines the effect of job loss using administrative data. In von Wachter, Song, and Manchester (2011), we compared our estimates directly to theirs. To analyze displacement in the early 1980s recession and be comparable to JLS, however, we have to ensure that information from the LEED is comparable to that of the MEF.

Achieving comparability of earnings data requires two steps. First, earnings in the LEED are capped at the Social Security taxable maximum. We follow a simple imputation procedure described in Kopczuk, Saez, and Song (2007) to make the earnings levels in the LEED comparable to those in the MEF. Second, coverage of Social Security was extended in the late 1970s and early 1980s to encompass public administration and other sectors. To maintain consistency of our sample over time, we exclude job separations from public administration and several social services (such as health and legal services) from our sample. Following Kopczuk, Saez, and Song (2007), we also exclude job separations from agriculture. To avoid censoring of our earnings observations, those sectors remain as sources of post-separation employment. Excluding those sectors helps to avoid changes in employer identification numbers (EIN) occurring for administrative reasons. The exclusions also help to smooth the incidence of job separation from 1980 to 1987, when

public administration was gradually added to the sample, and in 1978, the year we change data sources for uncapped earnings.

We next extract two groups of male workers with high attachment to their employer. Our main sample contains workers in stable employment from 1974 to 1979, but we also keep a sample of workers in stable employment from 1977 to 1979. A criticism of JLS was that by focusing on workers with six or more years of tenure at job loss, they isolate those workers likely to experience the largest losses. Thus, comparing the effect of job separation for workers with high job tenure (six years) with workers with shorter job tenure (three years) is of particular interest. Although not further discussed, the results are comparable when we consider lower tenured workers.

JLS also require that workers be born in or after 1930. The purpose of the restriction was to ensure that the average age at the time of job separation is roughly 40 years and that the majority of the sample is in their prime working years during the follow-up period. We keep that restriction initially when replicating our findings in von Wachter, Song, and Manchester (2011) as a benchmark. We then relax it with the goal of studying the claiming behavior of workers displaced near retirement age.

A critical step in our analysis is the dating of job separations. The most straightforward definition is simply a change in EIN from that of the employer of the stable job held in the late 1970s. However, we frequently observe longer employment spells at the same EIN that are interrupted for a single year. The explanation could be a transition to non-employment—such as in the case of temporary layoffs—or because a worker receives more earnings from another employer. An alternative definition would focus on first separations that are also permanent. We have experimented with various definitions of

separation. Because the alternative definitions yielded very similar results (see von Wachter, Song, and Manchester 2007), we chose a simple change in EIN as the most straightforward and inclusive definition.

One additional issue in the dating of separations related to claiming behavior is important to keep in mind. Given our definition of displacements, a worker who happens to retire in the year of a mass layoff at his employer will be counted as displaced. That issue frequently arises when studying outcomes that involve a spell of non-employment, such as entry into disability insurance or death. To avoid the problem of reverse causation, we do not consider the effect on claiming in the year of displacement itself. For further discussion of the problem and alternative solutions in the context of how job loss affects mortality, see Sullivan and von Wachter (2009).

### **3.3 Longitudinal Firm Data**

An important innovation of the data we use in this study is the availability of firm-level employment data for any employer operating in the U.S. from 1978 through 2004 that reports earnings covered by Social Security. For each employer in each calendar year, we have obtained the total number of workers with positive earnings.<sup>8</sup> In the case of multiple employers in a single year, we count a worker only at the employer at which the worker received the highest earnings. That approach avoids double counting workers who switch employers within a year or who hold multiple jobs.<sup>9</sup>

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<sup>8</sup> Note that the unit of analysis is the EIN, which may contain multiple establishments.

<sup>9</sup> Given substantial worker mobility within a year, some ambiguity arises in measuring firm size. Figures reported by the Census Bureau often refer to firm size at a given calendar date. That approach double counts workers with multiple jobs but does not count each job for workers who switch jobs. We have experimented with various ways of defining a worker-firm pair for generating estimates of firm size.

We define mass layoffs as instances where the employment of a firm drops by at least 30 percent.<sup>10</sup> Such a measure makes less sense for smaller firms with high variance of employment, so we follow JLS by restricting ourselves to firms that had at least 50 employees in 1979. Because our employment measures are based on annual earnings, if workers receive earnings for part of the year at the old employer, even a sudden drop in firm size may not appear immediately as a drop in employment. Thus, we consider changes in firm size over one and over two years. To be sure we capture a permanent decline and not temporary fluctuations in a firm's work force, we require firms' employment to have a minimum amount of stability before and after a sudden drop in employment.<sup>11</sup>

### **3.4 Sample Characteristics**

The rate of displacement from 1980 to 1986 in our sample of men employed in stable jobs at midsize to large firms 1974 to 1979 ranges from 18 percent to 22 percent, depending on age at layoff (see Table 1). Younger and older workers have a higher layoff rate (at 21 percent and 22 percent among those aged 20-29 and 50-59) respectively, than prime age workers (18 percent for those 30-49). A substantial fraction of workers separates from their employers for reasons other than what we call a displacement (see first row). Those separations include voluntary job changes, retirements, and exits from employment for other reasons. However, they are also likely to include involuntary departures from employment, for example from larger firms that lay off workers but do not

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<sup>10</sup> At present, the measure does not include plant closings because a non-negligible number of EINs reappears. However, few EINs disappear suddenly but instead have large employment declines prior to closing.

<sup>11</sup> Some of the permanent declines in employment we observe may arise from takeovers. To assess this possibility, we constructed the complete matrix of worker flows between firms, and flagged employment declines in which a high fraction of workers moved between just two EINs. Our results are robust to that restriction.

lay off at least 30 percent of their work force. Hence, we follow the literature and do not explicitly include those workers in the control group of non-displaced.<sup>12</sup>

As found by others, displaced workers have somewhat lower average annual earnings and a lower growth rate of earnings before displacement (again see Table 1). Both patterns may derive from the fact that firms in distress are likely to lower hours or weeks worked prior to the layoff. Displaced workers also tend to work at smaller firms. The fact that larger firms typically pay a wage premium could also explain the difference in earnings. In addition, some differences in the distribution of employment occur across major industries. Those differences are broadly similar for different ages at displacement. Below, we make an effort to exploit our high-quality administrative data to account for those pre-existing differences in our regression analysis.

As expected, we find differences in the average incidence of claiming Social Security (Old-Age) benefits during the period from 1980 to 2003 by displacement status and age at displacement (see Table 2).<sup>13</sup> Among stable workers ages 30 to 39 observed in the early 1980s, only 27 percent have a claim recorded in the Master Beneficiary Record by 2003. But 76 percent of workers ages 40-49 and 81 percent of workers ages 50-59 have claims. For all age groups, displaced workers have a lower propensity to claim than non-displaced workers (see the first row). On average, however, among people who claim benefits, younger displaced workers tend to claim at older ages than similar non-displaced workers. The pattern is reversed for those laid off in the older age group. Moreover, the annual Social Security benefit for separated workers is lower than for non-separated workers

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<sup>12</sup> This is further discussed at the end of Section 5.

<sup>13</sup> Note that the age group 20 to 29 is not included in the table because so few of them are eligible for Old-Age benefits by 2004.

among those who do claim. Consistent with the large losses in earnings we find in our companion paper (von Wachter, Song, and Manchester 2011), all age groups suffer substantial losses following displacement. We discuss our main findings further at the end of the paper.

## **4 The Effect of Job Displacement on Earnings and Employment**

Our data reveal several basic findings regarding the effect of job displacement during the early 1980s recession on workers' labor supply responses near retirement age.

- (1) Job displacement leads to substantial declines in employment for workers displaced near retirement age—on the order of 30 percentage points.
- (2) For workers displaced in middle age, the effect on labor supply near retirement age reverses; those workers experience increasing employment relative to the control group as they age.
- (3) The control group drives an important part of the effect of job displacement on employment near retirement age, as they experience more rapid declines in employment than displaced workers.
- (4) As workers displaced in middle age approach retirement age, their increased employment vis-à-vis the control group is important in reducing earnings losses. The decline in the earnings gap helps to diminish the cumulated loss in lifetime earnings arising from job displacement, but the loss remains substantial.

### **4.1 Effects on Earnings**

The prior literature on job displacement establishes that job displacement during the early 1980s recession reduces earnings up to 20 years after displacement (see Figure 1 showing results that include zero earnings). Excluding workers older than age 55, as in von Wachter, Song, and Manchester (2011), permits us to focus on the effect of job displacement during prime working age, when most male workers participate in the labor force. We see that workers displaced from a stable job in a mid-sized to larger employer in the early 1982 recession experienced large earnings losses that did not substantially decline even 20 years after job displacement.

Extending the analysis to reflect employment responses of workers near retirement age reverses the earlier finding, however. Including workers up to age 70, we observe that the earnings loss, measured by the gap in earnings between treatment and control group, declines substantially about 15 to 20 years after job loss.

To see those patterns better, we examine earnings losses for four groups by age at displacement (see Figure 2). We first exclude workers age 55 or older and then include workers up to age 70. Not surprisingly, the path of earnings losses for workers displaced up to age 40 is barely affected by the change. However, for workers displaced at ages 40 to 49, or 50 to 59, we see a reasonably steep recovery in earnings losses by including the earnings of older workers. The loss fades to zero, and workers displaced at ages 40 to 49 (50 to 59) experience *increases* in earnings vis-à-vis the control group of non-displaced workers 15 (10) years after job displacement.

Two factors largely drive those patterns; first, a steep recovery in employment among the displaced workers occurs vis-à-vis the control group; second, the control group exhibits

a more rapid decline in employment and earnings than the increase in employment or earnings for the group of displaced workers.

## **4.2 Effects on Employment**

Using the same regression strategy as for earnings but with a dummy for positive earnings as our measure of employment shows different patterns over time when we include workers ages 56 to 70 or not (see Figure 3). A substantial decline in employment takes place at job displacement;<sup>14</sup> for workers in prime working age (up to age 55), no substantial recovery in employment occurs in the years after job displacement. However, once we include employment observations when workers are ages 56 to 70, a substantial recovery in employment relative to the control group starts 10 years after job loss. For average workers displaced in middle age, the differences arise chiefly because displaced workers tend to work longer close to retirement age than their non-displaced counterparts.

4.3 The evolution of employment after job displacement for four groups of workers by age at displacement shows the differences more directly (see Figure 4). We first look at results excluding observations past age 55 (top panel), and then we include employment up to age 70 (lower panel). Excluding workers above age 55 leads to a nearly permanent reduction in employment following job displacement for all groups during prime working age. Consistent with the earnings losses in Figure 2, workers displaced at older ages suffer substantially larger declines in employment than younger displaced workers. Including employment past age 55, however, reveals a recovery in employment vis-à-vis the control group for workers displaced in their 40s and 50s. Again, equality vis-à-vis the control group

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<sup>14</sup> The effect is particularly large in the year after job loss, when many displaced workers are unemployed.

is reached for workers ages 41 to 50 (51 to 60) at job loss about 20 (15) years after displacement. Hence, taking the midpoint of the age intervals, the 'break-even' point occurs around ages 65 to 70. However, in contrast to the case of earnings, we do not see a substantial positive effect on employment past the break-even point.

To further investigate the finding that employment recovery seems to occur close to retirement age, we implement our second regression model. Instead of tracing the average path of employment after job loss based on multiple observations for each worker, the results now refer to employment status in a given age range. The results illustrate the role of age at displacement (or, equivalently, time since displacement) for employment near retirement age more directly (see Figure 5). Workers who are displaced close to age 62 to 64 (and hence reach that age range only a few years after job loss) experience large losses in employment relative to the control group (see the top panel). However, the employment rate at age 62 to 64 for workers displaced in middle age (who reach age 62 many years after job loss) is similar to that of the control group. In contrast, employment in middle age declines less after a job loss and is less dependent on the age at which job loss occurs.

The differences we see by age at displacement may arise in part because workers displaced close to age 62 are more likely to permanently drop out of the labor force. To assess that possibility, we replicate the analysis excluding workers who never have positive earnings after job loss (see bottom panel of Figure 5). The results suggest that differences in the age at permanent labor force exit cannot explain the pattern. In fact, the differences are now more striking. The employment rate in middle age varies little with age at displacement. However, employment above age 62 is significantly higher for workers displaced in middle age relative to workers displaced close to claiming age.

Overall, job loss has different effects on labor supply at older ages for workers displaced close to and far from claiming age. It appears that for workers displaced in middle age, working longer constitutes a way of recovering some of the losses in lifetime earnings resulting from job loss. For those displaced near retirement age, little scope may remain to recover earnings losses given reduced labor market opportunities and shorter time horizons, and Social Security benefits may represent a means of buffering the effect of income losses on consumption.

## **5 The Effect of Job Displacement on Claiming Social Security Benefits**

Our analysis of the effect of job displacement on claiming Social Security (Old-Age) benefits yields four significant findings.

- (1) Workers displaced near the age of eligibility for Old-Age benefits are more likely to claim benefits early. The effect is substantial, about 20 percent to 25 percent higher relative to the mean (and 10 percent higher when we allow the control group to claim contemporaneously).
- (2) The positive effect on early benefit claiming declines for workers displaced at younger ages, becomes zero, and switches sign for workers displaced seven or eight years before eligibility.
- (3) For workers displaced in their early 50s or younger, the effect is negative—those workers claim Old-Age benefits at later ages than the control group. The effect is again substantial, implying a drop in the incidence of early claiming of about 10 percent to 15 percent relative to the mean.

- (4) The delay in claiming and the rise in labor supply are not sufficient to eliminate substantial losses in Social Security benefits for displaced workers.

We again use the second regression model but now the outcome is the probability of claiming Old-Age benefits before the full retirement age (FRA). Using the administrative data we can derive the exact age at initial benefit claim. The regression results allow us to assess how the effect of job loss on the incidence of early claiming differs by age at displacement (or, equivalently, time since displacement). We find the incidence of early claiming clearly rises for those displaced close to or after age 62 (see Figure 6). The size of the effect is substantial relative to the mean (see Table 2). Part of the reason for that substantial effect is that in this specification our control group contains only workers of similar age who are employed. As discussed below, the effect is somewhat smaller if we allow the control group to claim benefits at any time. That restriction is of less concern for the long-term effect on claiming because the restriction on the control group's employment ends in 1986.

The effect of job displacement on early claiming becomes negligible seven or eight years after job loss, for workers displaced in their mid to late 50s. The effect then switches sign and turns negative for those workers displaced in their early fifties or younger, who reach eligibility a dozen years or more after job loss. The negative effect on claiming early for those displaced in middle age is smaller than the positive, immediate effect, but it remains non-negligible. Relative to the mean, our findings imply a 10 percent to 15 percent decline in the incidence of claiming before the FRA for workers displaced in their 40s.

The effect on claiming at age 65, the traditional retirement age, is similar. The incidence of claiming at age 65 declines significantly for workers displaced near retirement age, but it

risks for workers displaced in middle age (see Figure 7). In addition, average claim age falls in response to job displacement of workers near retirement age (see Figure 8). The effect on claim age then fades and turns positive for workers displaced in middle age who are sufficiently far away from being eligible for benefits.

Comparing the precise findings on claiming age to the coarse results for annual earnings and labor supply in previous sections leads to tentative interpretations of work behavior and benefit claiming. Previous results suggested that, relative to the control group, workers displaced in middle age had slightly higher annual earnings but similar annual employment rates when the two groups neared age 65 (Sections 4.1 and 4.2). In contrast, here we find that those previously displaced workers claim Social Security benefits four or five months later, on average. Altogether, the findings suggest that at least some previously displaced workers understand the advantages of waiting to claim Social Security benefits closer to the FRA. They continue to live on earnings alone for another few months, thereby avoiding some of the early claiming penalty that would reduce Social Security benefits for the rest of their lives.

A related question is how job loss affects AIME and hence the primary insurance amount (PIA)—the monthly Social Security benefit prior to adjustments for age at claim—by the age at displacement. Potentially two opposing effects come from the size and duration of losses in earnings. Workers displaced near retirement age experience larger losses in earnings, but those losses need not affect Social Security benefits because many workers at that age already have a 35-year work history sufficient to insulate them from the effect of earnings losses on AIME. In contrast, workers displaced in middle age suffer

smaller (albeit still substantial) losses that accrue over a substantially longer period of time.

The data reveal lower Social Security benefits for displaced workers in a hump-shaped pattern. The large declines in earnings for workers displaced near retirement age reduce AIME and hence PIA for at least some workers (see Figure 9).<sup>15</sup> For workers displaced 3 years to 7 years from eligibility age (in their late 50s), the negative effect is smallest; on average, the smaller earnings losses outweigh the longer period of time over which the losses occur. The small impact on the PIA may be partly explained by longer working lives, as documented in the previous section, an option perhaps not readily available for those displaced near retirement age. Finally, displacement affects lifetime earnings and PIA more negatively again for workers displaced in middle age. Those workers suffer lower earnings over many years, thereby depressing their Social Security benefits.

Controlling for pre-displacement characteristics of workers and their employers in our regression framework—such as the worker’s average earnings and growth in earnings from 1974 to 1979 and the employer’s industry, wage bill, and size in 1979—shrinks the benefit reduction. Prior to displacement, displaced workers on average had somewhat lower earnings and worked at smaller firms, implying that they would have lower AIME and hence PIA even in the absence of a layoff. However, the basic hump-shaped pattern is unaffected, and displaced workers tend to have substantially lower PIA. That result is consistent with the large declines in earnings found by von Wachter, Song, and Manchester (2011) based on the same data used here, and several other related studies.

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<sup>15</sup> PIA is a stepwise linear concave function of AIME.

In contrast, we find only moderate effects of controlling for pre-displacement worker and firm characteristics on outcomes other than PIA. We examine coefficients every five years after job displacement for different outcomes (see Table 3). The main findings without regression controls (corresponding to the results shown in Figures 5 to 9) appear in Panel A, and results that include the controls are in Panel B. Some differences arise and precision declines—especially many years after layoff when we have fewer observations—but the main results are unaffected.

Finally, as a robustness check, we allow the control group to claim benefits immediately after the job loss period as well. To do so, we study displacements occurring in a shorter time window, from 1981 to 1983. During this period, the control group is forced to remain with their employer as before because we have no information about the potential reason for a job separation other than during a mass layoff. However, now we allow non-displaced workers near retirement age during the early 1980s to retire almost immediately, substantially reducing the mechanical effect implicit in our main estimates (Figures 6 to 8).

After relaxing the claiming restriction on the control group, we find the same patterns as in our main results. Initially, the incidence of early claiming is substantially higher for those displaced in 1981-1983 than for non-displaced workers (see Figure 10A). The lines cross, however, about 5 years after the displacement period, after which non-displaced workers claim earlier. The mean claiming age for both groups echoes those results (see Figure 10B). The corresponding regression estimates for displacements during 1981 to 1983, with and without regression controls, confirm that the magnitude of the initial effect is now smaller, as expected (see Table 4). However, a substantial effect remains both in the short and long run, consistent with the patterns in Figure 10. Overall, we conclude that the

choice of the control group matters for the magnitude of our findings regarding displacement near retirement age but does not affect our overall message.

## **6 Summary and Discussion**

We used longitudinal administrative data on workers and their employers to analyze how job displacement affects labor supply at older ages and the incidence of claiming Social Security benefits. Unlike previous studies, we have information on both the reason for job loss from the employer side and on benefit claiming from administrative data. Moreover, we can follow workers over 20 years after job displacement and hence are the first to study how the timing of retirement is affected by job loss both at older ages and during prime working age.

Consistent with what others have shown, we find that job loss near retirement age leads to substantially lower employment rates. In addition, we find that the incidence of claiming Social Security benefits before the full retirement age (FRA) rises sharply after job displacement even for workers displaced several years prior to the early eligibility age of 62. We show that those workers claim early despite a substantial decline in Social Security benefits after job displacement. One explanation is that they may not be able to continue to work at similar wages and claim benefits early to avoid declines in consumption.

In contrast, we find that workers displaced in their 40s or early to mid-50s gradually make up their initial losses in employment; once they reach retirement age they work as much as the control group of non-displaced workers. They also claim Social Security benefits later than the control group, suggesting that job displacement leads them to delay permanent exit from the labor force. The rise in earnings at older ages allows those

workers to make up some of the lifetime earnings losses vis-à-vis the control group. However, the loss remains substantial and is reflected in lower Social Security benefits.

Our findings suggest that workers' decision to retire is influenced by adverse events that occur during their careers. The ability to work at older ages appears to be an important avenue for recovering from adverse employment shocks. The substantial incidence of displacement during working age in the population (von Wachter, Song, and Manchester 2011) underscores the importance of work at older ages.

Our findings also imply that many workers displaced near retirement age take the opportunity to claim early despite declines in Social Security benefits following job loss. Apparently, claiming early is perceived as a beneficial option given the new circumstances. Important questions remain for future work, however—whether the decision is indeed in the workers' best interest, whether workers make a mistake or have no choice given their health status or caretaking responsibilities, and what are the social costs and benefits of the early claiming decision of displaced workers.

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