

The Rise in Job Displacement, 1991-2004: The Crisis in American Manufacturing

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Executive Summary

This paper compares evidence on job displacement in the period 2001-2003, as the economy was recovering from the most recent recession, with evidence from the recovery from the prior recession, 1991-1993. Despite a lower average unemployment rate in the current recovery (5.5 percent, compared to 7.1 percent in the 1991-1993 period), the frequency and cost of job displacement have risen substantially. The paper finds that:

- In the period from 2001 to 2003, about 5.3 million workers or 4.0 percent of the work force were displaced from "long-tenure" jobs (those held three years or longer). This compares with a displacement rate of 3.6 percent, or 4.5 million workers in the period from 1991 to 1993.
- The manufacturing sector is suffering from crisis levels of displacement. In the three years from 2001 to 2003, almost one in ten manufacturing workers (9.8 percent) was displaced from a job held for at least three years. The longer-term toll of displacement is even larger. Using data covering the years 1991 to 2003, we estimate that between 17 percent and 26 percent of all manufacturing workers were displaced at least once from a long-tenure job.
- The economic costs of job displacement are high and rising. At the beginning of 2004, 29.3 percent of all workers who had lost a long-tenure job sometime during 2001-2003 had still not returned to work, a rate 4.0 percentage points higher than the corresponding figure a decade earlier. By 2004, two-thirds (66.3 percent) of the displaced workers who had found a full-time job were being paid less than that they had been at their prior job, up from 64.0 percent ten years earlier. Over one-third (36.4%) of the re-employed full-timers in 2004 had taken a pay cut of 20 percent or more at their new job.
- The economic costs of displacement are even greater for manufacturing workers. By the start of 2004, 33.0 percent of displaced manufacturing workers still had not returned to work, a figure 5.6 percentage points higher than the corresponding rate for workers in the service sector.
- Displaced, full-time manufacturing workers also took bigger pay cuts when they found new jobs. In 2004, almost three quarters (73.2 percent) of re-employed full-time manufacturing workers experienced a real-wage cut at their new job, compared to only 62.9 percent of service sector workers. Nearly 40 percent of manufacturing workers saw their inflation-adjusted weekly earnings drop 20 percent or more at their new job, compared to about 35 percent of service workers.

Other important findings include:

- Less-educated workers were generally more likely than more-educated workers to be displaced, but higher education was not a guarantee against displacement. Workers with only a college degree, for example, had a 3.9 percent displacement rate, not much better than the 4.4 percent rate for workers with just a high school education.
- The re-employment prospects for more educated workers have actually declined more than they have for less-educated workers. Between 1991-1993 and 2001-2003, the share of workers that did not return to work after their displacement grew 10.9 percentage points for those with an advanced degree and 8.3 percentage points for those with a college degree. By comparison, the share of displaced workers not returning to work was up only 0.7 percentage points for workers with less-than-a-high-school degree and 3.4 percentage points for workers with a high school degree.

Introduction

Involuntary job loss is an enduring feature of the US labor market. Taken together, advanced notification of layoffs, a well-functioning unemployment insurance system, adequately funded and appropriately targeted job training, and rapid overall job growth can greatly reduce the economic hardships facing workers who lose their jobs involuntarily. Unfortunately, the US labor market generally gives workers little or no advanced notice of layoffs.² State-run unemployment insurance systems cover only a portion of workers' lost incomes, for a limited period, and leave an important share of the unemployed without any coverage at all.³ Government and private training opportunities also fall far short of needs.⁴

During the second half of the 1990s, rapid job creation and sustained, low unemployment went some way toward compensating for these long-standing deficiencies in US labor-market policy, primarily by providing displaced workers with greater opportunities for quickly finding new, well-paying jobs. Unfortunately, the economic recession of 2001 and the subsequent "job-less" and even "job-loss" recovery have taken away this last line of defense for most displaced workers.

This paper analyzes data on involuntary job loss from the Displaced Workers Survey (DWS), a large, nationally representative, biennial survey conducted by the Bureau of the Census for the Bureau of Labor Statistics (BLS). The main focus of the paper is on assessing whether job displacement is more prevalent now than it was in the past. In short, a comparison of the most recent DWS (January 2004) with the DWS from ten years earlier (February 1994) –two periods when the economy was in roughly the same part of the business cycle– suggests that the incidence of job displacement has indeed increased. The most compelling finding of the analysis is the heavy and continuing concentration of manufacturing jobs in these high and rising rates of displacement. Since at least the early 1990s, job displacement has been a rising concern for American workers in general, but displacement has reached crisis proportions for America's manufacturing workers.

²See Schmitt (2004) for data on advanced notification from the 1994, 1996, 1998, 2000, and 2002 Displaced Workers Surveys.

³See Boushey and Wenger (2001), Wenger (2001), Emsellem, Goldberg, McHugh, Primus, Smith and Wenger (2002) for discussions of strengths and weaknesses of the unemployment insurance system.

⁴See Krueger and Rouse (2002) for a recent analysis of the US education and training system; Kletzer and Koch (2003) compare the US training system to those of other OECD economies.

Data Issues

Before presenting the main findings, this section of the paper addresses some key features of the data used here: the definition of displacement; the calculation of displacement rates; and the comparability of data in the 1994 and 2004 DWS.

Defining job displacement

This report defines displacement using the definition developed by the BLS for its own analysis of displacement. For a worker to qualify as a "displaced worker," he or she must have:

- lost a job during the three calendar years preceding his or her interview with the DWS;
- lost the job due to "plant closing"; "insufficient demand"; or because the "position or shift [were] abolished" (and never for cause);
- not expected to be recalled to the job within six months of being laid off; and
- held the lost job for at least three years.

Broader definitions are also possible. For example, some analysts have counted as displaced those workers who lost their jobs for additional reasons, such as the failure of a self-operated business or the end of seasonal employment; or, relaxed the requirement that workers have three or more years of tenure on the lost job; or, included workers who expected to be recalled within six months of their job loss.⁵ While each of these broader definitions has its merits, this report adheres to the strict definition employed by the BLS, in part, because the BLS definition probably best captures the experience of "downsizing," "outsourcing," and other terms used in the public discussion of job displacement, important features of which include the emphasis on the permanent loss of relatively long-term, steady, jobs.

Calculating displacement rates

From 1994 on, the DWS has asked workers about any episodes of job loss over the preceding three calendar years (prior to 1994, the recall period was five years). In 2004, for example, the DWS asked respondents about involuntary job loss during the calendar years 2001, 2002, and 2003. Given this three-year recall period, the most accurate way to present displacement rates are as "three-year rates," rather than more conventional "one-year" rates.⁶

This paper follows Farber's (2003) procedure for calculating displacement rates. The three-year displacement rate for all workers, for example, is defined as the ratio of all workers reporting displacement during the three years preceding the DWS, to the sum of the total workforce at the time of the survey plus any displaced workers not in the workforce at the time of the survey. The procedure for sub-groups is analogous. To

⁵ See Farber (2003) for an analysis of broader definitions of displacement. Baumol, Blinder, and Wolff (2003) examine the issue of "downsizing," including displacement (see their Chapter 8).

⁶ Dividing the three-year rates by three, will still give a rough estimate of the one-year rate.

calculate the displacement rate for female workers, for example, the numerator is all female workers reporting displacement during the three years preceding the DWS and the denominator is the total female labor force plus any displaced female workers not working, both at the time of the survey.

Comparability of 1994 and 2004 DWS

The DWS itself underwent few changes between 1994 and 2004 (see the Data Appendix for further details on the DWS). The main issues of comparability here concern the state of the labor market at the time of the two surveys, February 1994 and January 2004. Since the focus of this paper is measuring underlying or structural changes in displacement, any data analysis must control for the effects on displacement of the regular boom and bust cycle of the economy. In order to separate structural from cyclical changes, we need to compare displacement rates at roughly comparable points in the business cycle.

Table 1 summarizes several key labor-market variables over the years 1988 to 2003. The data in the table suggest that the three-year periods preceding the 1994 and 2004 DWS covered broadly comparable points in the business cycle. The unemployment rate, for example, rose sharply in both 1991 (from 5.6 percent to 6.8 percent) and 2001 (from 4.0 percent to 4.7 percent). The unemployment rate rose again in both subsequent years (to 7.5 percent in 1992 and to 5.8 percent in 2002). In the third year of each cycle, however, unemployment trends did diverge. Unemployment fell (to 6.9 percent) in 1993 but rose slightly (to 6.0 percent) in 2003.

TABLE 1
Unemployment, employment, and employment growth, 1991-2003

	Unemployment rate (%)	Employment rate (%)	Employment growth (%)	NBER Business Cycle
1988	5.5	62.3	3.2	
1989	5.3	63.0	2.5	
1990	5.6	62.8	1.4	Peak (Jul)
1991	6.8	61.7	-1.0	Trough (Mar)
1992	7.5	61.5	0.3	
1993	6.9	61.7	1.9	
1994	6.1	62.5	3.1	
1995	5.6	62.9	2.6	
1996	5.4	63.2	2.1	
1997	4.9	63.8	2.6	
1998	4.5	64.1	2.6	
1999	4.2	64.3	2.4	
2000	4.0	64.4	2.2	
2001	4.7	63.7	0.0	Peak (Mar); Trough (Nov)
2002	5.8	62.7	-1.1	
2003	6.0	62.3	-0.3	

Notes: Unemployment and employment rates from the Current Population Survey, Bureau of Labor Statistics (BLS), "Employment status of the civilian noninstitutional population, 1940 to date," <ftp://ftp.bls.gov/pub/special.requests/lf/aat1.txt>. Annual growth in total nonfarm employment (series CEU0000000001) from BLS, <http://www.bls.gov/ces/home.htm>. Dates for business cycle peaks and troughs from National Bureau of Economic Research, <http://www.nber.org/cycles/cyclesmain.html>.

Employment also showed a generally similar pattern across the two periods. Employment rates fell in 1991 (from 62.8 percent to 61.7 percent) and in 2001 (from 64.4 percent to 63.7 percent). Employment rates continued to fall in the following years, slightly in 1992 (to 61.5 percent) and sharply in 2002 (to 62.7 percent). Again, in the third year, behavior differed across the two recoveries. Employment rates inched up in 1993 (to 61.7 percent), but continued to decline (to 62.3 percent) in 2003.

In a broad sense, growth rates for employment (from the BLS's establishment survey) were similar across the two periods in that 1991-1993 and 2001-2003 were both periods of relatively poor job creation following periods of higher, steady growth. Employment growth rates, however, were considerably lower in 2001-2003 (falling at an annual average rate of 0.5 percent), than they were in 1991-1993 (rising at about 1.1 percent per year).

The basic labor-market data, then, establish that these were both periods of economic recovery. The earlier recovery was generally stronger in conventional terms, with improvements in the unemployment and employment rates in the third year of the first recovery, and higher average job growth than in the later recovery. Importantly for later analysis, even though the second recovery appears to have been weaker, the unemployment rate was consistently lower and the employment rate consistently higher in the second recovery than the first. To the extent that the *level* of the unemployment and employment rates are the most important determinants of both the prevalence of displacement and the post-displacement opportunities available to workers, we might expect that the lower unemployment rate and the higher employment rate in 2001-2003 would, if anything, have worked to lower displacement rates and improve economic outcomes for displaced workers relative to 1991-1993.

The last column of Table 1 notes the year and month of the peaks and troughs of the business cycle (as determined by the National Bureau of Economic Research, NBER). In the early 1990s, the economy peaked in July 1990 and reached its low-point in March 1991, 35 months before the February 2004 DWS. In the early 2000s, the economy peaked in March 2001 and then troughed in November 2001, about 26 months before the January 2004 DWS. For the most part, the NBER dates for economic peaks and trough reinforce the conclusion that the two periods cover similar points in the two business cycles. In both cases, the first year of each three-year periods marks the trough of the preceding business cycle and the emergence of a subsequent recovery.

At the same time, the NBER dates raise concern that the "extra" nine months between the earlier trough and the survey date –March 1991 to the February 1994 DWS, compared with November 2001 to the January 2004 DWS– may mean that displaced workers would have had less time to recover from the cyclical downturn in the 2004 DWS than they did in the 1994 DWS. **Table 2**, therefore, takes a closer look at the periods immediately preceding the 1994 and 2004 DWS. The main lesson from Table 2 is that while the economy did indeed appear to have recovered "more" by February 1994 than it had by January 2004, the economy had also recovered more 26 months after the March 1991 trough than it had by January 2004. For example, between the first trough and the first survey, the employment rate rose 0.5 percentage points, compared to a 0.6 percentage point *decline* between the second trough and the second survey. This would suggest the economy was farther along in its first recovery at the time of the first survey than was the case at the second survey. However, the table also demonstrates that even if the first DWS had been conducted 26 months after the first trough –exactly the same interval as between the second trough and the second survey– the change in the employment rate at that point would have been only -0.1 percentage points, still substantially better than the -0.6 percentage point change at the time of the second survey.⁷ We conclude that it is not primarily the shorter time interval between troughs and surveys that explains the weaker economic environment at the time of the 2004 survey, but, rather, the weaker nature of the second recovery itself.

⁷ Identical arguments are possible using the unemployment rate and employment growth rate figures.

TABLE 2
Comparison of economic circumstances covered by 1994 and 2004
Displaced Workers Surveys

	1991-1994	2001-2004
<i>(a) Level</i>		
Unemployment rate at trough (%)	6.8	5.6
Employment rate at trough (%)	61.8	63.0
Employment at trough, CES (thousands)	108,542	130,871
Unemployment rate at survey (%)	6.6	5.6
Employment rate at survey (%)	62.3	62.4
Employment at survey, CES (thousands)	112,665	130,194
Unemployment rate at 26 months (%)	6.7	5.6
Employment rate at 26 months (%)	61.7	62.4
Employment at 26 months, CES (thousands)	111,359	130,194
<i>(b) Change, trough to survey</i>		
Unemployment rate (p.p.)	-0.2	0.0
Employment rate (p.p.)	0.5	-0.6
Employment, CES (%)	3.8	-0.5
<i>(c) Change, trough to 26 months</i>		
Unemployment rate (p.p.)	-0.1	0.0
Employment rate (p.p.)	-0.1	-0.6
Employment, CES (%)	2.6	-0.5

Notes: For 1991-94, the National Bureau of Economic Research (NBER) dates trough in March 1991; survey occurred 35 months later in February 1994. For 2001-2004, NBER dates trough in November 2001; survey occurred 26 months later in January 2004. Unemployment rate (series LNS04000000) and employment rate (LNS12300000), for civilian noninstitutional population, and CES employment level (CES0000000001), are from Bureau of Labor Statistics website (<http://www.bls.gov/data/>). All data are seasonally adjusted.

In summary, we conclude that the periods preceding both the 1994 and 2004 surveys were broadly comparable. To the extent that the recovery had less time to "take" in 2004, it is also true that the weak nature of the 2001-2003 recovery also meant that the extra time would have not mattered greatly. Furthermore, to the extent that the unemployment rate was consistently lower and the employment rate consistently higher in 2001-2003 than was the case in 1991-1993, we would reasonably expect that the overall economic climate would have been more favorable looking back from January 2004 than it had been looking back from February 1994.

Findings

Prevalence of displacement

According to the DWS data, job displacement has been higher in the aftermath of the 2001 recession than it was following the 1991 recession. As **Table 3** shows, about 4.5 million workers or 3.6 percent of the workforce, were displaced between 1991 and 1993. During the 2001-2003 period, however, over 5.3 million workers or 4.0 percent of workforce were displaced.

TABLE 3
Workers displaced in preceding three years, 1994-2004

	1994	1996	1998	2000	2002	2004
Number (thousands)	4,463	4,161	3,567	3,266	3,957	5,329
Rate (%)	3.6	3.5	2.9	2.5	3.1	4.0

Notes: Analysis of CEPR extract of Current Population Survey Displaced Workers Survey. Follows BLS definition of displacement: lost job, which had been held for three or more years, due to plant closing, insufficient work, or position abolished; not expecting to be recalled in the next six months; and not self-employed at lost job. Excludes workers whose seasonal job ended, whose self-operated business failed, or who reported displacement for "other" reasons, or who expected to be recalled in the six months following job loss, or who had held the lost job for less than three years. Displacement rates are calculated as the total number of workers who report being displaced in the preceding three years over the sum of total employment as of the survey date and the total number of workers reporting displacement that are not working as of the survey date.

The rise in displacement rates between 1991-1993 and 2001-2003 is particularly striking given that general indicators of employment conditions were better in 2001-2003 than they were in 1991-1993. In 1991-1993, the unemployment rate averaged 7.1 percent, compared to 5.5 percent in 2001-2003. The average employment rate in the earlier period was 61.6 percent, compared to 62.9 percent more recently. These results suggest that the underlying or structural rate⁸ of job displacement is now significantly higher than it was ten years ago. At any given unemployment or employment rate, workers can expect to experience more job displacement now than they did a decade ago.

Types of workers displaced

Table 4 lists three-year displacement rates in 1991-1993 and 2001-2003 for different kinds of workers. Looking first at the results for 2001-2003, the data show that displacement rates varied markedly across different groups. Men had a higher displacement rate (4.2 percent) than women (3.7 percent). Older workers had higher rates than younger workers. The displacement rate for 55-64 year olds, for example, was 5.1 percent, compared to 3.5 percent for 25-34 year olds. Less-educated workers generally

⁸ Here, "structural" means not related to swings in the business cycle.

experienced more displacement than more-educated workers, but higher education was not a guarantee against displacement. Workers with only a high-school education, for example, had a 4.4 percent displacement rate, not much better than the 3.9 percent rate for workers with a college degree. Black workers suffered higher rates of displacement (4.7 percent) than white workers (3.9 percent). Since blacks have a lower probability than whites of being in their job for three years or longer, these results suggest job displacement is a particular problem for longer-tenured black workers.⁹ The group with the highest displacement rate in 2001-2003, however, was manufacturing workers, who had a 9.8 percent rate, compared to just 3.1 percent for service workers.

⁹ Many other relatively disadvantaged groups are also less likely than the population as a whole to have at least three years of tenure at the same job. Younger workers, women, and less-educated workers, for example, are less likely to be in "long-tenure" (three years or more) jobs and, therefore, less likely to meet the BLS's criteria for "job displacement" when they lose a job.

TABLE 4
Three-year displacement rates, by worker characteristics, comparison of
1991-1993 and 2001-2003 economic recoveries
 (Percent)

	1991-1993	2001-2003	Change
<i>(a) All</i>	3.6	4.0	0.4
<i>(b) Gender</i>			
Female	3.3	3.7	0.4
Male	4.0	4.2	0.2
<i>(c) Age</i>			
20-24	1.2	1.1	-0.1
25-34	3.6	3.5	-0.1
35-44	4.2	4.4	0.2
45-54	4.2	4.6	0.4
55-64	5.4	5.1	-0.3
65+	4.5	4.4	-0.1
<i>(d) Education</i>			
Less than high school	3.5	3.9	0.4
High school	3.8	4.4	0.6
Some college	3.8	4.0	0.2
College	3.7	3.9	0.2
Advanced	2.5	3.2	0.7
<i>(e) Race</i>			
White	3.7	3.9	0.2
Black	3.4	4.7	1.3
Hispanic	3.4	3.7	0.3
Other	3.6	4.2	0.6
<i>(f) Place of birth</i>			
Foreign born	3.6	4.1	0.5
US born	3.9	3.6	-0.3
<i>(g) Industry</i>			
Manufacturing	7.4	9.8	2.4
Services	2.8	3.1	0.3

Notes: Analysis of CEPR extract of Current Population Survey Displaced Workers Surveys for 1994 and 2004.

Between 1991-1993 and 2001-2003, displacement rates increased for most types of workers, but the burden of rising overall displacement was not shared equally. Displacement rates increased more for women (0.4 percentage points) than for men (0.2 percentage points). Displacement also rose more for the least *and most* educated workers than it did for those in the middle. High-school educated workers, for example, experienced a 0.6 percentage-point increase in displacement, similar to the 0.7 percentage-point increase for workers with an advanced degree, meanwhile college-educated workers saw only a 0.2 percentage-point rise. Displacement increased more among black workers (up 1.3 percentage points) than it did among whites (up 0.2 percentage points). Again, however, manufacturing workers were hit hardest. Between the early 1990s and the early 2000s, the displacement rate for manufacturing workers jumped 2.4 percentage points, compared to only a 0.3 percentage-point increase for service workers.

Manufacturing workers have borne, and continue to bear, the largest burden of the economy's high and rising levels of job displacement. In the three years from 2001 to 2003, almost one in ten manufacturing workers (9.8 percent) was displaced from a job that had been held for at least three years. The longer-term toll of displacement is even larger. Using DWS data for 1994 through 2004, we can estimate the share of manufacturing workers displaced at least once during the thirteen-year period 1991-2003. Depending on assumptions about the likelihood that workers experienced multiple episodes of displacement, we estimate that from 1991 to 2003, between 17 percent and 26 percent of all manufacturing workers were displaced at least once from a long-tenure job.¹⁰

Finding new work

The greatest challenge facing displaced workers is finding a new job. **Table 5** compares the re-employment experience of different kinds of workers across the 1991-1993 and 2001-2003 periods. The table shows the share of displaced workers who had not worked at all between the time they were displaced and the time they were interviewed for the DWS. Focusing first on the data for those who were displaced between 2001 and 2003, 29.3 percent of all displaced workers had not worked from the time of their displacement through the time of their DWS interview in January 2004. Rates were highest for women (33.1 percent had never returned to work), older workers (among 55-64 year olds, 36.4 percent had not worked at all since losing their job), the least educated (41.4 percent of those with less-than-a-high-school education), blacks (32.6 percent), and workers who lost a job in manufacturing (33.0 percent).

¹⁰ The DWS only collects information on one episode of displacement for each worker during each three-year period. The 26 percent rate assumes that workers were never displaced more than once over the 1991-2003 period. The calculation, which is based on the cumulative probability of not being displaced over the full period, is: $(1-0.074) * (1-(2/3)*0.061) * (1-(2/3)*0.047) * (1-(2/3)*0.051) * (1-(2/3)*0.071) * (1-(2/3)*0.098) = 0.740$. Multiplying the 1996 through 2004 rates by $(2/3)$ eliminates overlapping years in the survey under the assumption that displacement probabilities were identical over each of the three years. The 17 percent rate assumes that the same group of workers accounts for half of all displacements. The calculation is: $(1-0.074) * (1-(1/2)*(2/3)*0.061) * (1-(1/2)*(2/3)*0.047) * (1-(1/2)*(2/3)*0.051) * (1-(1/2)*(2/3)*0.071) * (1-(1/2)*(2/3)*0.098) = 0.829$. Stevens (1997) uses data from the Panel Survey of Income Dynamics to study multiple episodes of job loss.

TABLE 5
Share of all displaced workers that had never worked between
displacement, and the DWS survey, by worker characteristics,
comparison of 1991-1993 and 2001-2003 economic recoveries
 (Percent)

	1991-1993	2001-2003	Change
<i>(a) All</i>	25.3	29.3	4.0
<i>(b) Gender</i>			
Female	30.1	33.1	3.0
Male	21.8	26.4	4.6
<i>(c) Age</i>			
20-24	25.6	17.9	-7.7
25-34	19.2	24.9	5.7
35-44	19.1	22.7	3.6
45-54	25.2	30.3	5.1
55-64	37.6	36.4	-1.2
65+	73.2	71.4	-1.8
<i>(d) Education</i>			
Less than high school	40.7	41.4	0.7
High school	27.5	30.9	3.4
Some college	24.0	29.2	5.2
College	17.6	25.9	8.3
Advanced	9.4	20.3	10.9
<i>(e) Race</i>			
White	23.1	28.3	5.2
Black	32.9	32.6	-0.3
Hispanic	34.6	29.6	-5.0
Other	32.4	34.0	1.6
<i>(f) Place of birth</i>			
Foreign born	24.1	28.9	4.8
US born	35.3	32.4	-2.9
<i>(g) Industry</i>			
Manufacturing	28.6	33.0	4.4
Services	23.2	27.4	4.2

Notes: Analysis of CEPR extract of Current Population Survey Displaced Workers Surveys for 1994 and 2004.

The data in Table 5 also suggest that, between 1991-1993 and 2001-2003, re-employment rates fell substantially for most workers. Between the two periods, the overall share of workers never re-employed rose 4.0 percentage points. Relatively well off workers –men, "prime-age" workers (those aged 25 to 54), workers with the highest levels of education, and white workers, for example– generally experienced the worst decline in their re-employment prospects over the period. Between 1991-1993 and 2001-2003, the share of men who did not find any work after their displacement increased 4.6 percentage points, compared to a 3.0 percentage-point rise for women.

Among "prime-age" workers, the share that did not return to work after displacement rose 5.7 percentage points for 25-34 year olds, 3.6 percentage points for 35-44 year olds, and 5.1 percentage points for 45-54 year olds, while the portion of younger workers (down 7.7 percentage points) and older workers (down 1.2 percentage points for 55-64 year olds and 1.8 percentage points for workers 65 and older) actually fell.

The re-employment prospects of more-educated workers also appeared to decline more than they did for less-educated workers. Between 1991-1993 and 2001-2003, the share of workers that did not return to work after their displacement grew 10.9 percentage points for those with an advanced degree and 8.3 percentage points for those with a college degree. For less-educated workers the deterioration in re-employment prospects was much lower, with the share not returning to work up only 0.7 percentage points for workers with less-than-a-high-school degree and 3.4 percentage points for workers with a high school degree.

The share of white workers not returning to work after displacement jumped 5.2 percentage points, compared to a 0.3 percentage-point decline for black workers.

Economic costs for displaced, full-time workers

Table 6 shows a broader set of employment outcomes for the subgroup of workers who were displaced from full-time jobs. For this relatively well-off group (since we have excluded all part-time workers), we can track a broader set of employment outcomes after job loss, including the change in real earnings for those re-employed in full-time jobs. Looking first at the outcomes for all workers (panel (a)), by the time of their interview with the DWS, 13.8% of displaced full-time workers had left the labor force altogether, that is, they were neither working nor actively looking for a job. The 2004 level of labor-force withdrawal was 2.4 percentage points greater than it had been in the 1994 DWS survey. In both 1994 and 2004, about one in five displaced full-time workers was unemployed at the time of their DWS interview, with the unemployment rate 1.0 percentage point higher in 2004 (21.1 percent) than it was in 1994 (20.1 percent).

TABLE 6
Economic situation of displaced, full-time, workers, as of survey date, by gender, 1994 and 2004
 (Percent of all displaced, full-time, workers in same category)

	Not in labor force	Unem- ployed	Self- employed	Part-time	Full-time	Employed	Change in real weekly earnings: new full-time job compared to lost full-time job			
							-20% or more	Below, but w/in 20%	Equal, above but w/in 20%	+20% or more
<i>(a) All</i>										
1994	11.4	20.1	6.1	9.1	59.4	68.5	21.4	16.6	12.7	8.7
2004	13.8	21.1	5.2	7.8	57.2	65.0	20.8	17.1	10.7	8.7
Change	2.4	1.0	-0.9	-1.3	-2.2	-3.5	-0.6	0.5	-2.0	0.0
<i>(b) Men</i>										
1994	8.2	20.6	7.4	6.4	64.8	71.2	23.3	18.6	13.6	9.3
2004	11.1	21.4	5.8	5.7	61.9	67.5	22.1	17.5	12.0	10.3
Change	2.9	0.8	-1.6	-0.7	-2.9	-3.7	-1.2	-1.1	-1.6	1.0
<i>(c) Women</i>										
1994	16.5	19.3	3.9	13.2	51.0	64.2	18.6	13.3	11.3	7.8
2004	17.7	20.7	4.3	10.8	50.8	61.6	19.1	16.5	8.8	6.5
Change	1.2	1.4	0.4	-2.4	-0.2	-2.6	0.5	3.2	-2.5	-1.3

Notes: Analysis of CEPR extract of Current Population Survey Displaced Workers Survey, 1994, 2004. Real weekly wages calculated using the CPI-U-RS.

A portion of displaced full-time workers were in part-time jobs at the time of their DWS interview: about 9.1 percent in 1994 and 7.8 percent in 2004. Summing all forms of employment (self-employment, part-time, and full-time), about 65.0 percent of full-timers displaced between 2001 and 2003 were employed in January 2004, about 3.5 percentage below the employment rate for displaced full-timers interviewed in February 1994.

For those displaced, full-time workers who did manage to find a new full-time job, Table 6 also compares the distribution of real weekly earnings between the lost and the current jobs (last four columns). In 2004, more than one-third (36 percent) of the re-employed full-timers had taken a pay cut of 20 percent or more at their new job.¹¹ Almost two-thirds (66 percent) made less in their new job than in the job they lost. Only about 15 percent of those re-employed in full-time jobs, were in new jobs that paid 20% or more above what they had been earning in their lost job. Or, in other terms, at the time of their DWS interview, only 8.7 percent of displaced full timers were significantly economically better off in their new situation, since almost 43 percent of displaced full-timers had either left the labor force, were unemployed, working part-time or in self-employment, and were not back in full-time jobs.

The last two panels of Table 6 give separate data for women and men. In both 1994 and 2004, displaced full-time women were much less likely than displaced full-time men to be employed at the time of their DWS interview. In 2004, for example, about 67.5 percent of men were employed, compared to only 61.6 percent of women. Both employment rates were below the levels reached in 1994 (3.7 percentage points lower for men and 2.6 percentage points lower for women). In both years, women were much more likely to experience pay cuts after displacement. In 2004, for example, among workers displaced from a full-time job, 10.8 percent of women and only 5.7 percent of men were currently employed in part-time jobs, at weekly rates presumably below their previous full-time earnings. Of those women in full-time jobs, just over 70 percent had taken a pay cut in their new full-time job, compared to only 64 percent of men.

Table 7 provides similar data for white and black workers (panels (a) and (b)) and for workers who were displaced from jobs in services and manufacturing (panels (c) and (d)). In both years, displaced black workers faced lower re-employment probabilities than white workers did. In 1994, for example, 71.4 percent of white workers were re-employed, compared to only 60.6 percent of blacks. Even after re-employment prospects fell between 1994 and 2004 for whites (down 5.2 percentage points) and improved somewhat for blacks (up 1.5 percentage points), re-employment shares for blacks in 2004 were still well below those of whites (62.1 percent for blacks, compared to 66.2 percent for whites).

¹¹Calculated (and analogously, below) as 20.8 (in the -20 percent or more category)/57.2 (total full-timers).

TABLE 7**Economic situation of displaced, full-time, workers, as of survey date, by race and industry of lost job, 1994 and 2004**

(Percent of all displaced, full-time, workers in same category)

	Not in labor force	Unem- ployed	Self- employed	Part-time	Full-time	Employed	Change in real weekly earnings: new full-time job compared to lost full-time job			
							-20% or more	Below, but w/in 20%	Equal, above but w/in 20%	+20% or more
<i>(a) White</i>										
1994	11.2	17.4	6.9	9.6	61.8	71.4	22.3	17.3	13.1	9.1
2004	14.0	19.8	6.2	8.4	57.8	66.2	21.4	17.1	10.0	9.3
Change	2.8	2.4	-0.7	-1.2	-4.0	-5.2	-0.9	-0.2	-3.1	0.2
<i>(b) Black</i>										
1994	11.6	27.8	2.0	7.9	52.7	60.6	16.4	13.9	14.3	8.1
2004	11.9	26.0	4.3	8.2	53.9	62.1	18.0	15.7	12.1	8.0
Change	0.3	-1.8	2.3	0.3	1.2	1.5	1.6	1.8	-2.2	-0.1
<i>(c) Services</i>										
1994	9.8	18.3	7.7	10.2	61.7	71.8	21	17.5	13.3	9.9
2004	12.1	19.8	6.1	9.1	59	68.1	20.5	16.6	12.2	9.8
Change	2.3	1.5	-1.6	-1.1	-2.7	-3.7	-0.5	-0.9	-1.1	-0.1
<i>(d) Manufacturing</i>										
1994	13.9	22.4	3.6	7.3	56.5	63.7	22.5	14.9	11.9	7.2
2004	17.0	23.0	3.2	5.5	54.4	60.0	21.7	18.1	8.0	6.6
Change	3.1	0.6	-0.4	-1.8	-2.1	-3.7	-0.8	3.2	-3.9	-0.6

Notes: Analysis of CEPR extract of Current Population Survey Displaced Workers Survey, 1994, 2004. Real weekly wages calculated using the CPI-U-RS.

The last two panels of Table 7 compare outcomes for workers who lost jobs in services and in manufacturing. We have already seen that manufacturing workers suffered displacement rates about three times higher than those in services. The data in Table 7 demonstrate that once manufacturing workers lose their jobs, they also have greater difficulties than service-sector workers do landing on their feet again. In 2004, for example, displaced manufacturing workers were: more likely to withdraw completely from the labor force (17.0 percent, compared to 12.1 percent for services); more likely to be unemployed (23.0 percent, compared to 19.8 percent); less likely to find any form of employment (60.0 percent, compared to 68.1 percent); and less likely to find full-time employment (54.4 percent, compared to 59.0 percent). Among those who managed to find full-time work, manufacturing workers also took the biggest pay cuts. Almost 40 percent of displaced, full-time manufacturing workers who had found a new full-time job were earning at least 20% less than they had in their old job, compared to about 35 percent for those in services. In fact, almost three-fourths (73.2 percent) of displaced, full-time manufacturing workers who had found a new full-time job were making less in their new job than they had in the job they lost, compared to 62.9 percent that were earning less in their new job in 1994.

Conclusion

Job displacement rates are high and rising, despite relatively low levels of unemployment and relatively high levels of employment in the early 2000s. In the absence of legal requirements for advanced notification of layoffs, a well-functioning unemployment insurance system, and a well-function national job training system, displaced workers face substantial economic hardships. Many displaced workers leave the labor force altogether. Many others enter unemployment. The majority finds work, but often in part-time jobs or self-employment, not full-time jobs. Even among those who do find a new full-time job, about two-thirds take a real pay cut, with more than one-third losing 20 percent or more compared to their old job.

All of these outcomes are worse for manufacturing workers, who have higher displacement rates, higher unemployment rates, lower re-employment rates, and larger drops in earnings.

Data Appendix

The DWS is a survey of job displacement administered every other year since 1984, in January or February, as part of the Bureau of the Census' Current Population Survey (CPS). The CPS is a monthly survey of 50,000 to 60,000 households (used for, among other purposes, to calculate the official unemployment rate). In the DWS, all participants in the CPS age 20 and older were asked about job displacement during the preceding five years (1984 through 1992) or preceding three years (1994 through 2004). Workers who reported that they had experienced job loss due to "plant closing," "slack demand," or "position or shift abolished" were then asked a series of detailed follow-up questions about the lost job, their post-displacement experience, and their current economic situation. For more details on the CPS, see the CPS home page: <http://www.bls.census.gov/cps/>; for the DWS, see the DWS home page: <http://www.bls.census.gov/cps/dispwkr/dispwkr.htm>.

This report analyzes portions of the six most recent versions of the survey, for 1994, 1996, 1998, 2000, 2002, and 2004, which cover job losses during the period 1991 to 2003. The main focus here is on the surveys for 1994 and 2004, which cover the period 1991-1993 (the 1994 DWS) and 2001-2003 (the 2004 DWS). Changes in the recall period for the survey make comparisons before and after 1992 difficult. (See Farber, 2003, for an attempt to create a consistent series of job displacement across the change in the DWS.) The survey underwent additional, though minor, changes between 1994 and 1996, and has been essentially identical since 1996. Using the BLS's definition of displacement, the annual breakdown of the sample size is: 1994: 2,303; 1996: 1,677; 1998: 1,496; 2000: 1,322; 2002: 1,831; and 2004: 2,207.

From January 2003, the CPS changed the method it used to categorize respondents' race. Before January 2003, respondents were given relatively few choices to describe their racial background, and did not allow for mixed-race categories. From January 2003, respondents are allowed to choose from a much longer list of categories that does allow for mixed-race categories. While no coding scheme for the race variable across the change is entirely satisfactory, this paper classifies all respondents in all years in four, mutually exclusive categories: white, black, Hispanic, or other. After the change, respondents that describe themselves as black or any racial mix that includes black have been coded as black; respondents that describe themselves as Asian, Pacific Islander, Native American, Native Hawaiian, or any racial mix that includes these and other non-black race categories have been coded as other. Before and after the CPS coding change, any respondent that identified him or herself as being Hispanic was coded as Hispanic, regardless of race.

The manufacturing sector includes a small portion of workers in mining. The service sector includes transportation, communications, utilities, and construction.

All programs used to construct the data are available by request to jschmitt@cepr.net; beginning in September 2004, the programs will also be available for downloading through CEPR's Data Resource Project (see <http://www.ceprdata.org>).

APPENDIX TABLE 1
Share of all displaced workers, by worker characteristics, comparison of
1991-1993 and 2001-2003 economic recoveries
 (Percent)

	1991-1993	2001-2003	Change
<i>(a) All</i>	100.0	100.0	0.0
<i>(b) Gender</i>			
Female	41.6	43.5	1.9
Male	58.4	56.5	-1.9
<i>(c) Age</i>			
20-24	3.4	2.8	-0.6
25-34	26.3	20.0	-6.3
35-44	31.1	28.5	-2.6
45-54	21.7	28.2	6.5
55-64	13.7	16.6	2.9
65+	3.8	3.9	0.1
<i>(d) Education</i>			
Less than high school	11.4	7.9	-3.5
High school	35.7	34.3	-1.4
Some college	30.3	29.2	-1.1
College	16.9	20.1	3.2
Advanced	5.7	8.5	2.8
<i>(e) Race</i>			
White	79.1	69.9	-9.2
Black	9.4	12.7	3.3
Hispanic	8.0	11.4	3.4
Other	3.4	5.9	2.5
<i>(f) Place of birth</i>			
Foreign born	89.5	87.4	-2.2
US born	10.5	12.6	2.2
<i>(g) Industry</i>			
Manufacturing	35.4	32.7	-2.7
Services	62.9	66.6	3.7

Notes: Analysis of CEPR extract of Current Population Survey Displaced Workers Surveys for 1994 and 2004.

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