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Job Loss Consequences and the Pandemic Recession

Angela Guo, Pawel Krolikowski, and Meifeng Yang

Workers displaced during the pandemic recession experienced better subsequent earnings and employment outcomes than workers displaced during previous recessions. A sharp recovery in aggregate labor market conditions after the pandemic recession accounts for these better outcomes. The industry and occupation composition of displaced workers, the prevalence of worker recalls, and the uptake of unemployment insurance benefits are unlikely explanations.

From 2019 through 2021, 8.6 million workers experienced job displacement, an involuntary loss of a job because of plant closure or insufficient work (US Bureau of Labor Statistics, 2022).[1] In the past, displaced workers have typically experienced large earnings losses that can persist for up to 20 years (Jacobson, LaLonde, and Sullivan, 1993; Schmieder, von Wachter, and Bender, 2010). Also, workers displaced during recessions have substantially worse earnings outcomes, on average, than those displaced during expansions (Davis and von Wachter, 2011). Have workers that were displaced during the pandemic recession also experienced these adverse outcomes?

In this *Economic Commentary*, we compare the labor market outcomes of workers displaced during the 1990–1991, 2001, and 2008–2009 recessions to those displaced during the pandemic recession in 2020. Workers displaced in previous recessions experienced mean earnings losses of about 20 percent when measured within three years after displacement. These losses were about twice as large as those experienced by workers displaced during expansions. In contrast, workers displaced during the pandemic recession experienced almost no earnings loss, on average. Similarly, workers displaced during the pandemic recession experienced better employment outcomes than workers displaced during previous recessions. We assess whether pandemic-related factors explain these differences. We find that the industry and occupation composition of lost jobs, the prevalence of worker recalls, and the uptake of unemployment insurance (UI) benefits are unlikely explanations. However, a sharp recovery in aggregate labor market tightness after the pandemic recession accounts for these differences, consistent with some standard theories about wage and employment determination (for example, Pissarides, 2000).

Angela Guo is a research analyst at the Federal Reserve Bank of Cleveland. Pawel Krolikowski is a senior research economist at the Federal Reserve Bank of Cleveland. Meifeng Yang is a PhD student at the University of Michigan.

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Data and Sample Construction

We use data from the Displaced Worker Survey (DWS) supplements to the Current Population Survey (CPS), which is produced by the Bureau of Labor Statistics (BLS). The DWS has been fielded biennially in January or February from 1984 to 2022. The target population includes individuals who recently lost or left their jobs because of plant closure, insufficient work, or other similar reasons.[2] The survey collects information about workers' lost jobs, such as earnings, hours worked, industry, occupation, and year of displacement. In addition, we use data from the monthly CPS about workers' post-displacement labor market outcomes.

In our analysis, we use DWSs starting in 1990 to include the late 1980s expansion and the 1990–1991 recession in our sample.[3] We include individuals from the ages of 20 through 64 at the time of the survey. We include only individuals who report job loss as a result of plant closure, insufficient work, or an abolished position because these job losses are likely to be involuntary and only these workers were asked follow-up questions about their lost job since the 1994 DWS (Farber, 2011). We exclude individuals who are out of the labor force at the time of the survey in order to focus our analysis on workers who are strongly attached to the labor market, but our results are similar when we include these workers, consistent with Coile (2022). We omit workers with any missing variables used in our analysis, such as employment status at the time of the survey or the year of displacement.[4] After these restrictions, our "unemployed/employed" sample includes 46,336 displaced workers. We also make use of an "employed" sample in which we omit individuals who are not employed at the time of the survey or who have missing weekly earnings or hours information.[5] After these additional restrictions, this sample includes 26,971 workers.[6]

To measure labor market tightness, we use the monthly ratio of job openings from the composite Help-Wanted Index (Barnichon, 2010) to the number of unemployed individuals from the CPS.[7]

Earnings of Displaced Workers and the Pandemic Recession

We use the employed sample to plot the mean log difference in the real weekly pre- and post-displacement earnings (approximately the mean percent change) against the mean annual unemployment rate at the time of displacement for years 1987 to 2021, as shown in Figure 1.[8, 9] The size of the circles represents the number of workers displaced each year.[10] The dashed black horizontal line depicts the mean earnings change in our employed sample.[11]

Higher unemployment rates at the time of displacement are associated with greater mean earnings losses, as shown in Figure 1. This relationship is economically meaningful: A 1.0 percentage point increase in the mean annual unemployment rate at the time of displacement raises the mean earnings loss of displaced workers by about 1.4 percentage points. These results are consistent with findings from Davis and von Wachter (2011), who use Social Security earnings records to document the counter-cyclicality of displaced worker earnings losses.

The mean earnings loss for workers displaced in 2020 stand out in at least two ways. First, this loss was 2.8 percent (standard error 2.7 percent). That is, workers displaced from their jobs in 2020 who were reemployed by January 2022 had no statistically significant change in their earnings by January 2022. This mild impact contrasts with an overall mean earnings loss following displacement in our sample of 12.0 percent (standard error 0.34 percent) and with earnings losses of about 20 percent for workers displaced during previous recessions. Nevertheless, this mild impact is consistent with evidence in Hobijn and Şahin (2022) that labor market conditions in 2022 are similar to those before the pandemic recession. Second, the mean earnings loss for workers displaced in 2020 is the largest outlier from the (orange) line of best fit. That is, the level of the unemployment rate observed in 2020 was historically associated with larger earnings losses, and the mean earnings loss following displacement in 2020 was historically associated with lower unemployment rates. As an example of the latter, workers displaced in 1997 had a similar mean earnings loss to those displaced in 2020, but the mean unemployment rate was about 3 percentage points lower in 1997.

Controlling for Other Factors

The means in Figure 1 do not provide an explanation for why the earnings losses of workers displaced in 2020 are smaller than those of workers displaced during previous recessions. In this section we explore several possible explanations by conducting a regression analysis. This analysis allows us to differentiate the impact of the pandemic recession from previous recessions on the earnings changes around displacement while controlling for other factors.

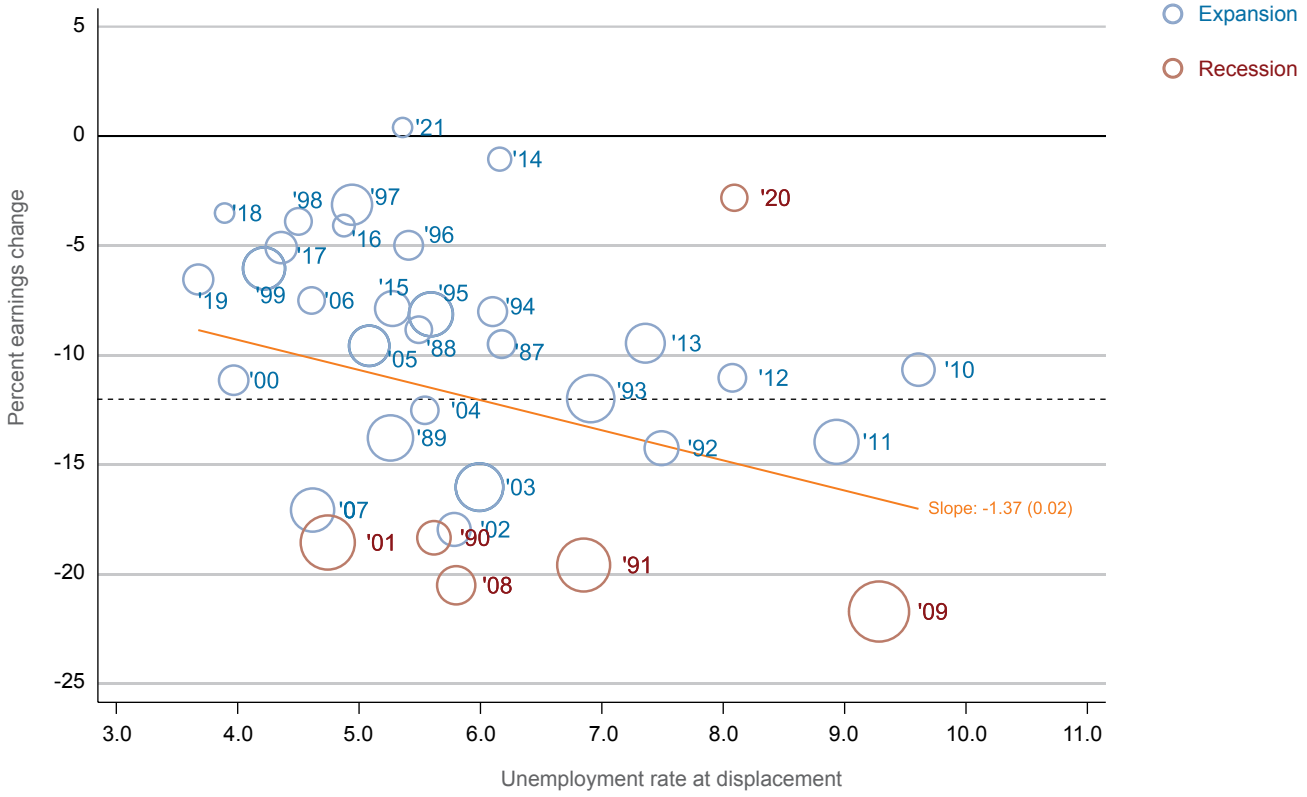
Our regression results using the employed sample appear in Table 1, in which each column controls for a different factor. The outcome variable is the log difference between real weekly pre- and post-displacement earnings. Column (1) controls for displacement in each of the four recessions in our sample, along with a constant that captures the mean earnings loss of workers displaced during expansions. Column (2) controls for worker characteristics: gender (sex), race, age, schooling, tenure on the lost job, years since displacement, and state of residence at the time of the survey.

Columns (3) through (6) of Table 1 are motivated by pandemic-related phenomena. In column (3) we control for the industry and occupation composition of lost jobs because during the pandemic recession, job loss was more pronounced in the leisure and hospitality industry (Forsythe et al., 2020). Also, in results not shown, we find that workers displaced from this industry experience a smaller earnings loss on average than workers displaced from other industries. In column (4) we control for whether the worker appears

to have been recalled to his or her previous job because of the prevalence of temporary layoffs during the pandemic recession (Wolcott et al., 2020; Gertler et al., 2022; Hall and Kudlyak, 2022).[12] In column (5) we control for whether workers received UI benefits after job loss, motivated by the increases in UI benefits during the pandemic recession (Ganong et al., 2020; Petrosky-Nadeau and Valletta, 2021). In column (6) we control for labor market tightness at the time of the survey because of the sharp recovery in labor market conditions after the pandemic recession and because some theories emphasize the role of tightness in wage determination (for example, Pissarides, 2000). Table 1, Panel B presents statistical tests for whether the impact of the four recessions, and the earlier three recessions, on earnings changes are the same and whether the 2020 pandemic recession had a different impact from each of the previous three recessions.

The results in Table 1, Panel A suggest that labor market tightness accounts for the smaller earnings losses experienced by workers displaced in 2020 relative to those in previous recessions. Industry and occupation composition of lost jobs, the prevalence of worker recalls, and the uptake of UI benefits are unlikely explanations. Column (1) reiterates two facts from Figure 1: Workers displaced in 2020 experienced a small mean earnings loss (-9.9 + 7.1 = -2.8 percent) and this loss was smaller than the losses experienced by workers displaced in the previous three recessions, losses which were about 20 percent (for example, -9.9 – 9.5 = -19.4 percent in the 1990–1991 recession). The better earnings outcomes of workers displaced during the 2020 pandemic recession relative to those displaced during previous recessions are not explained by worker characteristics or the industry and occupation composition of lost jobs, as shown in columns (2) and (3). In particular, the effect of displacement in 2020 in Panel A is positive in both these columns, but it is negative for the previous recessions. Column (4) suggests that being recalled improves the earnings outcomes of displaced workers by 9.4 percentage points on average, but the difference

Figure 1. Mean Earnings Changes of Displaced Workers versus the Mean Annual Unemployment Rate in the Year of Displacement



Sources: Authors' calculations, Bureau of Labor Statistics, Displaced Worker Surveys

Note: The figure shows the mean earnings changes of displaced workers against the mean unemployment rate in the year of displacement. The size of the circles represents the number of workers displaced each year. The solid orange line represents a line of best fit in which each observation is weighted by the number of individuals used to compute the mean annual earnings changes (R-squared equals 0.13). The dashed black horizontal line depicts the mean earnings changes in our sample. Data point labels refer to the year of displacement and the year of the unemployment rate. Individuals not employed at the time of the survey are excluded.

between the 2020 and previous recessions remains similar. Column (5) suggests that UI benefit receipt is negatively correlated with displaced workers' earnings changes, but, again, the discrepancy between the 2020 and previous recessions persists. Column (6) suggests that after controlling for labor market tightness, the earnings loss experienced by workers displaced during the 2020 pandemic recession is no different from those during previous recessions. These regression results suggest that workers who were displaced in 2020 experienced only a small earnings loss because of the sharp recovery in labor market tightness after the pandemic recession. The statistical tests in Panel B support these conclusions.

Full-Time Status and Employment Outcomes

To better understand the outcomes of workers displaced during the pandemic recession relative to previous recessions, we also analyze post-displacement hours worked and employment. To study hours, we use the employed sample, and we classify employment as full-time if workers' hours were at least 35 hours per week; anything less than 35 hours per week is classified as part-time. We analyze whether a worker is employed full-time at the time of the survey, controlling for the factors discussed above and for the hours status of the predisplacement job.

Labor market tightness is important for understanding whether workers are employed full-time at the time of the survey, as shown in Table 2. For this analysis, we use the employed sample, and the outcome variable is an indicator for whether an individual is employed full-time at the time of the survey. The constant term in column (1) suggests that 85.9 percent of workers who were displaced from full-time jobs during expansions were employed full-time at the survey date. Workers displaced during the 1990–1991 and 2008–2009 recessions had a lower probability of full-time status than workers displaced during expansions. Point estimates in Table 2, Panel A suggest that workers displaced during the pandemic recession suffered about as much as those displaced during the 1990–1991 and 2008–2009 recessions, and we cannot consistently reject similar effects between the 2020 pandemic recession and the three prior recessions.[13] Columns (2) through (5) show that controlling for worker characteristics, the industry and occupation composition of lost jobs, being recalled, and receiving UI benefits does not change this conclusion. Controlling for labor market tightness suggests that workers displaced during the pandemic recession had similar declines in the probability of being employed full-time as workers displaced during the 1990–1991 recession and larger declines than those displaced during the 2001 and 2008–2009 recessions, as shown in column (6).

Labor market tightness explains the improved employment outcomes of workers displaced during the pandemic recession, as shown in Table 3.[14] For this analysis, we use the unemployed/employed sample, and the outcome variable is an indicator for whether an individual was re-employed at the time of the survey. The constant in column (1) suggests that 77.1 percent of workers displaced during expansions and still in the labor force were employed at the survey date. Workers displaced during the three earlier recessions had a lower probability of being employed at the survey date than workers displaced during expansions, and this difference was as much as 18.7 percentage points during the 2008–2009 recession. Workers displaced during the pandemic recession, however, had a 10 percentage point higher probability of being employed at the survey date than workers displaced during expansions. Controlling for worker characteristics reduces this benefit of being displaced in the 2020 pandemic recession relative to expansions, but these workers still do better than those displaced during other recessions, as shown in column (2). Columns (3) and (4) show that controlling for the industry and occupation composition of lost jobs and receiving UI benefits does not change this conclusion. Controlling for labor market tightness suggests that workers displaced during the pandemic recession had similar declines in the probability of being employed at the survey date as workers displaced during the 2008–2009 recession and larger declines than those displaced during the 1990–1991 and 2001 recessions, as shown in column (5).

Conclusions

Despite unprecedented disruptions to the labor market during the 2020 pandemic recession, workers displaced during that period experienced better employment and earnings outcomes than workers displaced during previous recessions. We find that the sharp recovery in aggregate labor market conditions after the pandemic recession accounts for these differences. Our regression analysis suggests that the industry and occupation composition of lost jobs, the prevalence of worker recalls, and the uptake of UI benefits are unlikely explanations.

Table 1. Earnings Changes of Displaced Workers

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Explanatory factors						
Displaced in 1990–91	-0.095***	-0.105***	-0.102***	-0.103***	-0.086***	-0.052***
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
Displaced in 2001	-0.087***	-0.087***	-0.078***	-0.076***	-0.073***	-0.046***
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
Displaced in 2008–09	-0.114***	-0.108***	-0.105***	-0.103***	-0.092***	-0.043***
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.013)
Displaced in 2020	0.071**	0.056**	0.045	0.047*	0.071***	-0.055*
	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.031)
Recalled				0.094***	0.087***	0.087***
				(0.009)	(0.009)	(0.009)
Received UI benefits					-0.143***	-0.140***
					(0.007)	(0.007)
Tightness						0.115***
						(0.013)
Constant	-0.099***	-0.174***	-0.424***	-0.438***	-0.377***	-0.466***
	(0.004)	(0.035)	(0.048)	(0.048)	(0.047)	(0.048)
Worker characteristics	No	Yes	Yes	Yes	Yes	Yes
Ind. & occ. on lost job	No	No	Yes	Yes	Yes	Yes
Panel B. P-values for equality tests						
1990–91, 2001, 2008–09, 2020	<0.001	<0.001	<0.001	<0.001	<0.001	0.955
1990–91, 2001, 2008–09	0.260	0.440	0.282	0.219	0.552	0.868
1990–91, 2020	<0.001	<0.001	<0.001	<0.001	<0.001	0.942
2001, 2020	<0.001	<0.001	<0.001	<0.001	<0.001	0.807
2008–09, 2020	<0.001	<0.001	<0.001	<0.001	<0.001	0.752
Observations	**26,971**	**26,971**	**26,971**	**26,971**	**26,971**	**26,971**

Sources: Authors' calculations, Barnichon (2010), Bureau of Labor Statistics, Displaced Worker Surveys

Note: The dependent variable is the difference in log real weekly earnings before and after displacement. "Ind." stands for industry and "occ." stands for occupation. Industry and occupation controls include two-digit dummies. All p-values in Panel B are for two-sided tests of the nulls. Standard errors in parentheses. (*** p<0.01, ** p<0.05, * p<0.1)

Table 2. Post-Displacement Hours Worked of Displaced Workers

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Explanatory factors						
Displaced in 1990–91	-0.058***	-0.057***	-0.066***	-0.067***	-0.067***	-0.053***
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Displaced in 2001	0.007	0.013	0.007	0.008	0.008	0.019
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Displaced in 2008–09	-0.046***	-0.052***	-0.048***	-0.048***	-0.047***	-0.028**
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.009)
Displaced in 2020	-0.029	-0.042*	-0.020	-0.020	-0.019	-0.069**
	(0.019)	(0.019)	(0.019)	(0.019)	(0.019)	(0.021)
Worked <35 hours in lost job	-0.393***	-0.342***	-0.313***	-0.313***	-0.313***	-0.313***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Recalled				0.028***	0.027***	0.028***
				(0.006)	(0.006)	(0.006)
Received UI benefits					-0.001	-0.000
					(0.005)	(0.005)
Tightness						0.046***
						(0.009)
Constant	0.859***	0.768***	0.849***	0.845***	0.846***	0.810***
	(0.003)	(0.024)	(0.032)	(0.032)	(0.033)	(0.033)
Worker characteristics	No	Yes	Yes	Yes	Yes	Yes
Ind. & occ. on lost job	No	No	Yes	Yes	Yes	Yes
Panel B. P-values for equality tests						
1990–91, 2001, 2008–09, 2020	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1990–91, 2001, 2008–09	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1990–91, 2020	0.156	0.484	0.025	0.022	0.021	0.495
2001, 2020	0.084	0.009	0.200	0.198	0.201	<0.001
2008–09, 2020	0.414	0.640	0.171	0.168	0.166	0.091
Observations	**26,971**	**26,971**	**26,971**	**26,971**	**26,971**	**26,971**

Sources: Authors' calculations, Barnichon (2010), Bureau of Labor Statistics, Displaced Worker Surveys

Note: Linear probability model in which the dependent variable is an indicator for whether the individual is employed at a full-time job at the time of the survey. "Ind." stands for industry and "occ." stands for occupation. Industry and occupation controls include two-digit dummies. All p-values in Panel B are for two-sided tests of the nulls. Standard errors in parentheses. (*** p<0.01, ** p<0.05, * p<0.1)

Table 3. Post-Displacement Employment Outcomes of Displaced Workers

	(1)	(2)	(3)	(4)	(5)
Panel A. Explanatory factors					
Displaced in 1990–91	-0.108***	-0.087***	-0.088***	-0.069***	-0.030***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Displaced in 2001	-0.070***	-0.035***	-0.035***	-0.030***	0.000
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Displaced in 2008–09	-0.187***	-0.179***	-0.175***	-0.157***	-0.100***
	(0.007)	(0.006)	(0.006)	(0.006)	(0.007)
Displaced in 2020	0.104***	0.011	0.009	0.033**	-0.118***
	(0.017)	(0.016)	(0.016)	(0.016)	(0.018)
Received UI benefits				-0.140***	-0.135***
				(0.004)	(0.004)
Tightness					0.136***
					(0.008)
Constant	0.771***	0.507***	0.527***	0.598***	0.495***
	(0.002)	(0.020)	(0.027)	(0.026)	(0.027)
Worker characteristics	No	Yes	Yes	Yes	Yes
Ind. & occ. on lost job	No	No	Yes	Yes	Yes
Panel B. P-values for equality tests					
1990–91, 2001, 2008–09, 2020	<0.001	<0.001	<0.001	<0.001	<0.001
1990–91, 2001, 2008–09	<0.001	<0.001	<0.001	<0.001	<0.001
1990–91, 2020	<0.001	<0.001	<0.001	<0.001	<0.001
2001, 2020	<0.001	0.009	0.015	<0.001	<0.001
2008–09, 2020	<0.001	<0.001	<0.001	<0.001	0.372
Observations	**46,336**	**46,336**	**46,336**	**46,336**	**46,336**

Sources: Authors' calculations, Barnichon (2010), Bureau of Labor Statistics, Displaced Worker Surveys

Note: Linear probability model in which the dependent variable is an indicator for whether the individual is employed at the time of the survey. "Ind." stands for industry and "occ." stands for occupation. Industry and occupation controls include two-digit dummies. All p-values in Panel B are for two-sided tests of the nulls. Standard errors in parentheses. (*** p<0.01, ** p<0.05, * p<0.1)

Endnotes

1. "Those who were temporarily absent from a job due to a pandemic-related business closure or reduced business hours are not considered displaced workers" (US Bureau of Labor Statistics, 2022).
2. A worker who expects to be recalled to his or her most recent job within six months is not considered displaced.
3. We do not use the 1984, 1986, and 1988 DWSs in order to minimize issues related with changing the recall period from five to three years in the 1994 DWS (see Farber, 2003, for example). Relatedly, we omit individuals in the 1990 and 1992 DWSs who report a displacement four or five years ago. As such, our sample does not include workers displaced before 1987.
4. We also omit self-employed workers and individuals working in industries associated with agriculture (on the lost job and the current job, if any) and those in the armed forces.
5. We also omit individuals with top-coded weekly earnings and we trim log earnings differences at the 1st and 99th percentiles to mitigate the influence of outliers.
6. We do not use weights in our analysis, although using CPS final sample weights yields similar quantitative results.
7. Job openings information from the Job Openings and Labor Turnover Survey begins in December 2000, and we need data beginning in January 1990 in order to measure labor market tightness at the time of the survey.
8. We use the Consumer Price Index (CPI) for all urban consumers to deflate weekly earnings. We use the mean CPI during a worker's displacement year to deflate predisplacement earnings, and we use the CPI in the month and year of the survey to deflate a worker's post-displacement earnings.
9. Conclusions are similar if we use labor market tightness at the time of displacement instead of the unemployment rate. We use the unemployment rate to relate to previous literature, as discussed below.
10. Because the DWS is fielded every two years and we include workers displaced no more than three years ago, each data point in the scatter plot includes individuals displaced in a particular year, but with post-displacement earnings measured in potentially different survey years. For example, the data point for 2009 includes individuals displaced only in 2009, but these workers' post-displacement earnings could be measured in 2010 or 2012.
11. The mean log difference in the real weekly pre- and post-displacement earnings for displaced workers likely understates the earnings losses experienced by displaced workers because it misses the earnings growth among nondisplaced workers. For a discussion of difference-in-difference estimates using the CPS and DWS, see Farber (2015); and for a more general discussion of choosing a control group for displaced workers, see Krolikowski (2018).
12. The DWS does not provide information on employer identification over time, so we cannot use the approach in Fujita and Moscarini (2017) to identify recalls. Instead, we assume that pre- and post-displacement jobs are the same if their three-digit industry and occupation codes are the same, similar to the way in which Card and Hyslop (1996) and Daly, Hobijn, and Wiles (2012) identify job stayers.
13. We can reject the hypothesis that the hours effect of the 2020 pandemic recession was the same as for the 2001 recession at the 90 percent confidence level.
14. This table does not include an indicator for being recalled because this variable is missing for workers who are not employed at the time of the survey.

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