# Job Displacement by Race and Gender

Natalie Duncombe

University of Wisconsin-Madison

November 16, 2021

## 1    Introduction

Workers who lose their jobs to layoffs or business closures, called displaced workers, see large and long-lasting earnings losses. Typically, economic analysis treats displacement events as a result of market conditions and not determined by a worker's characteristics. Yet, when we dig deeper, we see that the likelihood of job displacement varies by gender and race. Even in these supposedly random events, and the outcomes that follow, there is evidence of the racial and gender disparities present in other areas of the labor market. Understanding the underlying causes and consequences of disparities in displacement is the first step to developing policy to address them.

In this essay, I analyze patterns of job displacement and outcomes by race and gender. Jacobson et al. (1993) and others empirically show large and persistent wage losses following displacement for workers in the United States. The literature has not as thoroughly analyzed patterns in job loss risk and outcomes by race and gender despite the well-documented racial and gender differences in the labor market. In this essay, I demonstrate how these disparities carry over to displacement and draw attention to areas of future work that might inform policy to address these disparities.

For my analysis, I use data from the Displaced Worker Supplement (DWS) to the Current Population Survey. The DWS offers detailed information on workers who lose their jobs due to layoffs or business closures. I first examine the likelihood of displacement for workers by gender and race. I then use the DWS to look at workers short-run outcomes following a displacement. For outcomes, I examine labor force status, earnings, unemployment, hours, and wages. While I will often refer to race and gender independently of one another in

my analysis, the intersectionality of these identities may also be important. To account for this, I include analysis on the interactions of workers' race and gender for their displacement experience.

I first look at displacement by gender, starting with rates of displacement. I document that compared to men, women see a lower risk of displacement. When analyzing potential reasons for this difference, occupations play a large role. Women tend to work in occupations with a lower risk of job displacement. The role of occupations in displacement parallels other evidence of differences in occupational choice by gender. Women, for a variety of reasons, prioritize some non-wage amenities including job stability, which contributes to the gender wage gap (Wiswall and Zafar, 2018). My results provide further evidence of women's potential prioritization of job security.

Looking at displacement outcomes, we see clearer disparities between men and women. Once displaced, women who stay in the labor force see larger earnings losses primarily due to a reduction in hours worked and longer periods of unemployment. Yet, just looking at earnings losses for those in the labor force understates the difference in losses due to a large gap in labor force participation. Women exit the labor force at significantly higher rates than men. When looking closer, the gap in labor force participation mainly comes from high rates of exit for women with children. Societal norms relating to gender differences in responsibilities for raising children remain a significant factor in the aggregate gender earnings gap. My work suggests that further work could be done to understand how the presences of children in the household may alter the resiliency of women to employment shocks and consequences for earnings.

Turning to racial differences in displacement, on average Asian American workers see the lowest displacement likelihoods compared to workers from other racial groups. Black workers see the highest. Unlike when analyzing displacement by gender, disparities in displacement risk by race increase after accounting for occupation. Further work is needed to determine what drives differences in displacement rates, but higher rates of displacement have clear consequences. At the highest level, larger flows into unemployment may contribute to a higher unemployment rate. We see an average unemployment rate for Black workers at twice that of White workers. More personally for workers, higher displacement risk means a higher chance of earnings losses, and for families, it means a higher chance of financial stress.

The disparities by race in displacement risk carry over into post-displacement outcomes, particularly for Black workers. Black workers see the largest short-run earnings losses, which stem primarily from higher rates of unemployment. On average, Black workers spend 4 weeks

longer in unemployment. Again, further work is needed to analyze the causes of extended unemployment for Black workers, but correspondence studies offer evidence of employer discrimination in hiring which would increase the difficulty in finding new work (Bertrand and Mullainathan, 2004). Again, differences in unemployment duration for workers may carry over to a higher rate of unemployment for Black workers.

To confront disparities in the labor market, policymakers consider a range of fiscal, and more recently, monetary tools. Unfortunately, racial disparities carry over into access to government support following displacement. Most displaced workers rely on government programs to fill gaps in earnings. However, Hispanic workers, particularly Hispanic men, receive unemployment insurance at lower rates during these periods. For workers, disparities in government support can mean disparate outcomes in life quality to the same shock. Indeed, recent work highlights higher cuts in spending for Hispanic and Black workers following job loss (Greig et al., 1994).

Just as outcomes of displacement vary by race and gender, the policy tools needed will also vary depending on what disparity policymakers wish to target. For instance, unemployment insurance may help smooth differences in earnings losses by race, but might not help mothers who leave the labor force or those who have difficulty receiving benefits due to enrollment barriers.

I structure the remainder of the essay as follows: Section 2 briefly discusses some of the relevant literature. In Section 3, I describe the data sample. Section 4 documents displacement risk and outcomes by race and gender, and section 5 examines potential causes. In Section 6, I discuss policy implications. Section 7 concludes the essay.

## 2    Related Literature

While this essay focuses on job displacement, it continues a larger conversation by researchers on labor market disparities by race and gender. In terms of methods, my paper draws on the literature evaluating the persistent effects of job loss. Jacobson et al. (1993), Couch and Placzek (2010), and others empirically show large persistent wage losses following displacement for laid-off workers. However, there is relatively little research centering differences in job displacement by race and gender and examining the macroeconomic consequences of these disparities.

Papers looking at job displacement more broadly often include results by race and gender, but few focus on the causes and consequences of the observed differences. Examples of

papers that document differences by race and gender alongside their main analysis include Farber (2017) and Hu and Taber (2011) who both use the DWS. Work that looks directly at disparities in displacement for Black workers includes Mar and Ong (1994) and Field and Winfrey (1997). There is also a growing literature examining job displacement outcomes by gender and the role of children (Crossley et al., 1994; Illing et al., 2021). My work builds on prior empirical analysis by examining the interaction of race and gender and expanding the analysis of displacement by race to include Hispanic and Asian workers.

A persistent gap in wages and labor force participation between men and women exists in the US and other countries (Goldin et al., 2017; Hornstein and Kudlyak, 2019). Looking at the wage gap, occupational sorting plays a role with fewer women entering high-paying occupations (Gayle et al., 2012; Hunt, 2016). Differences in occupational sorting may to be due to gendered differences in preferences for certain job amenities (Mas and Pallis, 2017; Wiswall and Zafar, 2018; Le Barbanchon et al., 2020). My results offer further evidence of the result in Wiswall and Zafar (2018) that women show greater preference for job security when choosing jobs. Further work can also examine whether higher rates of labor force exits for women with children following displacement may contribute to the gender lifetime participation and earnings gap.

My findings of disparities in displacement outcomes align with other work documenting wage and employment differentials by race. Lang and Lehmann (2011) review the evidence of gaps in earnings, unemployment, and labor force participation by race. Much of the literature focuses on differences between Black and White workers. Despite policies stemming from the civil rights movement to target these disparities, the earnings gap between Black and White workers has grown since the 1980s (Bayer and Charles, 2018; Daly et al., 2017). To this conversation, I add further evidence of racial differences in labor market experiences in terms of job displacement. Displacement may also have implications for the Black-White earnings gap, given the importance for labor market dynamics, particularly unemployment, for disparities in earnings (Daly et al., 2020).

# 3   Data

I use the Displaced Worker Supplement (DWS) to the Current Population Survey for my analysis. The DWS provides the most comprehensive information on the short-run outcomes of displaced workers in the United States.

The DWS sample covers 1984-2018 with new data available every two years. I categorize

workers as displaced if they report leaving their job in the past three years due to a layoff or plant closure. A layoff entails job loss from a position or shift being destroyed, and I do not count those who report being displaced for reasons such as the end of seasonal employment.

I exclude those who are self-employed or currently enrolled in school. I also only consider individuals over the age of 23. When analyzing displaced workers, I restrict analysis to those who were employed full-time in their lost job. This leaves me with 57,311 observations of displacement. Beyond race and gender, I use experience, tenure in the displaced job, education, marital status, and occupation as my control variables. For occupation, I use the 12 major occupational categories from the Census Bureau's 1990 occupation codes.

# 4   Displacement Facts by Race and Gender

Table 1: Summary Statistics by Race and Gender

| | Men | | | | | Women | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *White* | *Black* | *Asian* | *Hisp.* | *All* | *White* | *Black* | *Asian* | *Hisp.* | *All* |
| **Full Sample** | | | | | | | | | | |
| Labor Force Part. (%) | 73.81 | 68.61 | 78.96 | 81.88 | 74.21 | 57.76 | 60.62 | 61.31 | 57.66 | 58.21 |
| Unemployment (%) | 4.09 | 10.09 | 4.22 | 6.86 | 5.34 | 3.93 | 7.88 | 7.78 | 7.07 | 4.74 |
| Full-Time (%) | 87.65 | 86.35 | 88.07 | 85.77 | 87.31 | 71.03 | 78.83 | 77.89 | 73.92 | 72.39 |
| Displacement (%) | 10.97 | 12.50 | 6.59 | 10.51 | 10.90 | 9.35 | 10.7 | 5.62 | 9.64 | 9.38 |
| Sample Size | 617,165 | 66,504 | 27,203 | 66,277 | 777,149 | 693,991 | 92,396 | 32,175 | 75,950 | 894,512 |
| **Displaced Workers** | | | | | | | | | | |
| % Change in Earnings | -26.81 | -41.96 | -27.29 | -29.00 | -28.39 | -27.44 | -40.77 | -26.73 | -36.01 | -29.82 |
| Labor Force Part. (%) | 91.29 | 90.15 | 89.4 | 92.81 | 91.19 | 84.05 | 83.54 | 82.32 | 80.91 | 83.55 |
| Unemp.(%) | 23.80 | 39.21 | 29.29 | 29.52 | 25.95 | 21.83 | 35.27 | 27.27 | 33.04 | 24.77 |
| Unemp. Duration (wks) | 15.34 | 19.86 | 13.90 | 13.63 | 15.53 | 16.36 | 21.17 | 13.98 | 17.94 | 17.06 |
| Full-time (%) | 84.66 | 79.49 | 86.78 | 78.48 | 83.21 | 74.30 | 72.33 | 78.5 | 72.86 | 74.00 |
| Sample Size | 26, 628 | 2,823 | 924 | 3,336 | 34,442 | 16,799 | 2,776 | 639 | 2,173 | 22,869 |

Notes: This table reports average labor market outcomes for workers in the DWS. The sample period is 1984-2018. The sample of displaced workers only includes workers who were employed full-time in their last job. Earnings are only calculated for those still in the labor force as either employed or unemployed workers. Unemployment duration and full-time vs. part-time variables are only available for currently employed workers.

I start by looking at the average displacement rate for full-time workers across race and gender in the DWS sample, reported in table 1. Asian workers have the lowest displacement rate, with 6.59 percent of Asian men and 5.62 percent of Asian women reporting a displacement in the last 3 years. Black men have the highest displacement rate at 12.5 percent,

followed by White men at 10.87 percent and Hispanic men at 10.5 percent. Overall, women have lower displacement rates than men. Black women see the highest displacement rate among women. While women generally have a lower displacement rate, the rate for Black women is more comparable to men at 10.7 percent. Hispanic women follow with a displacement rate of 9.64 percent, and White women have a displacement rate of 9.35 percent.

The table also summarizes workers' short-run outcomes following a displacement by race and gender. For displaced workers, table 1 reports the average change in weekly earnings, current employment status (labor force participation and part-time status for the employed), and unemployment duration (for the re-employed) by race and gender. The sample of displaced workers only includes workers who were employed full-time in their last job. I calculate earnings changes only for workers still in the labor force, either as employed or unemployed. I can only evaluate unemployment duration and full-time vs. part-time variables for currently employed workers. As a comparison, the table also reports population statistics for labor force participation for all adults, the unemployment rate for those in the labor force, and the rate of full-time work for the employed as a comparison to displaced workers.

Looking at the summary statistics, we can start to see large gaps in outcomes. Black workers, both men and women, see the largest earnings losses, over 10 percent higher than other racial group averages. One contributor to higher earnings losses may be higher unemployment rates among Black displaced workers. For labor force participation, women of all racial groups drop out more than their male counterparts. This fact is particularly striking given that the workers in the sample were working full-time before displacement. We can also see the importance of considering the interaction of race and gender. While Hispanic men have the shortest duration of unemployment between displacement and finding new work, Hispanic women have the second highest.

# 5   Potential Causes

Summary statistics paint an initial picture of differences in displacement by race and gender. To dive deeper into consider potential reasons for these differences, I turn to empirical analysis. The goal of this analysis is two-fold: 1) to examine the "significance" of differences in outcomes by race and gender, and 2) to identify other characteristics that may correspond with differences in the displacement experience.

Achieving both of these goals involve including controls for observable characteristics in my empirical analysis. After accounting for variables like education, occupation, and

marital status, I can see whether the differences between men and women or differences by race observed in the data remain unexplained after accounting for other factors. At the same time, these controls help identify important factors that account for some of the differences seen in the summary statistics of the data by race and gender.

I run ordinary least squares (OLS) or Probit analysis with displacement and earnings as the primary outcome variables. My specification is as follows:

$$y_{it} = \alpha_o + \mathbf{x}'_{it}\beta + \gamma_1 Race_i + \gamma_2 Female_i + \gamma_3 Race_i * Female_i + \delta year_t + \epsilon_{it}$$

where $\mathbf{x}$ is a vector of controls for worker characteristics. These controls include education, experience, tenure in the lost job, occupation, and marital status. I add year fixed effects to account for variation in displacement over time and use robust standard errors.

This method of analysis does have its limits. While it can help identify variables that are statistically significant with regards to certain outcomes, I am unable to causally interpret the relationship between the variables. For instance, if race and gender show statistical significance after accounting for other variables, it does not mean that someone's race or gender causes the differences in outcomes. Instead, we can interpret this as evidence of the myriad and significant ways a worker's labor market experience varies by race and gender.

## 5.1    Displacement Risk

I first run a Probit regression with displacement as the outcome variable. Table 2 reports the marginal effects at means of the analysis. Column (1) report the results with worker characteristic controls except for occupation. Column (2) adds controls for occupation to analyze the importance of occupation sorting. Column (3) reports the same with interactions for race and gender.

With the basic controls, women have a 6.7 percentage point lower predicted probability of displacement than men. Asian workers have a 5.4 percentage point lower predicted probability of displacement than non-Hispanic White workers, while Black workers have a 2.6 percentage point higher predicted probability of displacement. Hispanic worker have similar rates of displacement to White workers. Displacement risk declines significantly both with educational attainment and with a worker's job tenure (not shown).

Occupational sorting plays a large role in the difference in displacement risk for men and women. After controlling for occupation, women have a higher predicted risk of displacement

7

Table 2: Probit Analysis of Displacement Risk

|  | (1) Displaced | (2) Displaced | (3) Displaced |
|---|---|---|---|
| Female | -0.0672*** | 0.0344*** | 0.0373*** |
|  | (0.00669) | (0.00774) | (0.00873) |
|  |  |  |  |
| Black | 0.0258* | 0.0367** | 0.0527** |
|  | (0.0116) | (0.0119) | (0.0168) |
|  |  |  |  |
| Asian | -0.0541*** | -0.0804*** | -0.0642** |
|  | (0.0162) | (0.0165) | (0.0217) |
|  |  |  |  |
| Hispanic | 0.00811 | -0.00972 | -0.0234 |
|  | (0.0110) | (0.0114) | (0.0143) |
|  |  |  |  |
| Black*Female |  |  | -0.0333 |
|  |  |  | (0.0235) |
|  |  |  |  |
| Asian*Female |  |  | -0.0386 |
|  |  |  | (0.0332) |
|  |  |  |  |
| Hispanic*Female |  |  | 0.0368 |
|  |  |  | (0.0216) |
|  |  |  |  |
| Constant | -1.598*** | -1.744*** | -1.746*** |
|  | (0.0203) | (0.0231) | (0.0232) |
| Year FE | Yes | Yes | Yes |
| Occ. FE | No | Yes | Yes |
| Controls | Yes | Yes | Yes |
| N | 446361 | 444408 | 444408 |

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note: This table reports the marginal effects at means of a Probit analysis of displacement likelihood of full-time workers with controls for worker characteristics using data from the DWS. The sample period is 1984-2018.

than men. Accounting for occupational sorting also increases the disparities in displacement risk by race.

## 5.2 Labor Market Outcomes

After displacement, prior work documents that workers see large and persistence earnings losses. To analyze implications by race and gender, I first examine the labor force participation outcomes of displaced workers. I then consider workers' earnings post-displacement and analyze the two components of earnings, hours and wages.

**Labor Force Participation**

To analyze labor force participation, I start with workers who were employed full-time in their displaced job. These workers would be on the higher end of labor force attachment. I restrict to full-time workers since I do not have a measure of hours worked, and it will make later analysis of wages more comparable. Results are reported in table 3.

8

Table 3: Probit Analysis of Labor Force Participation

| | (1) Not in Labor Force | (2) Not in Labor Force | (3) Not in Labor Force | (4) Not in Labor Force |
|---|---|---|---|---|
| Female | 0.425*** | 0.449*** | 0.231*** | 0.272*** |
| | (0.0288) | (0.0309) | (0.0313) | (0.0318) |
| Black | 0.0524 | 0.0311 | 0.0253 | 0.0184 |
| | (0.0525) | (0.0321) | (0.0328) | (0.0323) |
| Asian | 0.213** | 0.186*** | 0.192*** | 0.187*** |
| | (0.0676) | (0.0446) | (0.0452) | (0.0456) |
| Hispanic | -0.0828 | 0.0258 | 0.0253 | 0.0182 |
| | (0.0462) | (0.0346) | (0.0341) | (0.0337) |
| Black*Female | -0.0406 | | | |
| | (0.0732) | | | |
| Hispanic*Female | 0.217*** | | | |
| | (0.0628) | | | |
| Asian*Female | -0.0590 | | | |
| | (0.0951) | | | |
| Children | | -0.0319 | -0.268*** | |
| | | (0.0183) | (0.0278) | |
| Child*Female | | | 0.473*** | |
| | | | (0.0400) | |
| No. of Children | | | | -0.0983*** |
| | | | | (0.0133) |
| No. Children*Female | | | | 0.206*** |
| | | | | (0.0165) |
| Constant | -1.605*** | -1.610*** | -1.540*** | -1.557*** |
| | (0.0753) | (0.0780) | (0.0780) | (0.0781) |
| Year FE | Yes | Yes | Yes | Yes |
| Occ. FE | Yes | Yes | Yes | Yes |
| Controls | Yes | Yes | Yes | Yes |
| N | 41363 | 41363 | 41363 | 41363 |

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

This table reports the marginal effects of a Probit analysis of labor force exit for former full-time workers controlling for worker characteristics. The sample period is 1984-2018.

The most striking differences in labor force participation are seen by gender. Women have a 42.5 percentage point higher predicted probability of exiting the labor force than men after controlling for occupation. Other work highlights the role that children may play in women's labor force participation. To test whether having children plays a role in the labor force participation disparities between men and women following displacement, I first control for whether the worker has children. I then add an interaction between worker's gender and having children in the household to the Probit analysis. Without interactions, children seem to have no influence on labor force participation. However, this masks that the presence of

Table 4: OLS Analysis of Earnings Changes

| | (1)<br>% Change Earnings | (2)<br>% Change Earnings | (3)<br>% Change Earnings | (4)<br>% Change Earnings |
|---|---|---|---|---|
| Black | -11.22*** | -11.19*** | -1.693 | -1.630 |
| | (1.664) | (1.695) | (1.018) | (1.313) |
| | | | | |
| Asian | -2.147 | -1.671 | 4.361* | 2.518 |
| | (2.610) | (2.484) | (1.915) | (2.743) |
| | | | | |
| Hispanic | -1.708 | -1.231 | 2.363* | 2.438 |
| | (1.303) | (1.321) | (1.029) | (1.373) |
| | | | | |
| Female | -1.436 | -2.628** | -2.766*** | -2.838*** |
| | (0.929) | (0.832) | (0.661) | (0.711) |
| | | | | |
| Unemployed | | | -93.10*** | -93.10*** |
| | | | (0.802) | (0.797) |
| | | | | |
| Black*Female | | | | -0.139 |
| | | | | (1.713) |
| | | | | |
| Hispanic*Female | | | | -0.209 |
| | | | | (1.871) |
| | | | | |
| Asian*Female | | | | 4.274 |
| | | | | (5.060) |
| | | | | |
| Constant | -54.86*** | -55.32*** | 0.0548 | 0.0840 |
| | (3.764) | (3.808) | (2.015) | (2.042) |
| R Squared | 0.117 | 0.121 | 0.469 | 0.469 |
| Year FE | Yes | Yes | Yes | Yes |
| Occ. FE | No | Yes | Yes | Yes |
| Controls | Yes | Yes | Yes | Yes |
| N | 29044 | 28765 | 28765 | 28765 |

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

This table reports the coefficients of an OLS analysis of earnings changes for workers currently in the labor force, controlling for worker characteristics using the DWS. The sample period is 1984-2018.

children in the household has opposite implications for labor force participation for men and women. Men with children in the household have a 26 percentage point higher likelihood of staying in the work force, while women with children have a 47 percentage point higher likelihood of exiting the labor force. This effect increases with the number of children in the household.

When looking at race, Asian Americans show the least attachment with a 21 percentage point higher likelihood of exiting the labor force post-displacement.

**Earnings**

Next, I analyze outcomes for workers who stay in the labor force. I first analyze earnings, a typical level of analysis when considering workers outcomes. While I exclude those who exit the labor force, I do include those who are currently unemployed and therefore reporting

zero earnings. Adding those who exit the labor force would only enhance the disparities.

Table 4 reports estimates from an OLS regression of percent change in weekly earnings for displaced workers controlling for worker and lost-job characteristics. Black workers' weekly earnings decline by 11 percent more on average than non-Hispanic White workers. Asian and Hispanic workers do not have significantly different losses compared to non-Hispanic White workers. I also add unemployment status as an additional control variable. The results indicate that differences in unemployment can account for the larger earnings losses for Black workers.

Women's earnings decline 2.6 percent more than men after controlling for occupation. This result is robust to differences in unemployment. When controlling for unemployment, the interaction terms of gender and race do not show additional differences in earnings losses.


Hours

Next, I look closer at one component of earnings: hours. I start with unemployment, the biggest short-run contributor to lost hours for displaced workers. Since the DWS collects data from workers at different points after displacement, I analyze unemployment in two ways. Firstly, for currently employed workers I analyze the duration of unemployment between when a displaced worker losses the job loss and when they find new employment. Secondly, I consider those who report currently being unemployed. Unfortunately, this later measure does allow for the possibility that a worker found a new job post-displacement and re-entered unemployment at the time of the survey response. Finally, I can examine whether workers who find new employment currently work full- or part-time.

Table 5 shows the estimates of the OLS regression with unemployment duration in weeks and current unemployment status as explanatory variables. Black workers spend about 4 weeks longer in unemployment than other workers with similar characteristics. Women also spend about a week more in unemployment than men. Controlling for occupation does not change these results. The interactions of gender and race do show additional variation beyond what is seen when looking at race and gender separately. I find that Hispanic women spend about two weeks longer in unemployment compared to their male counterparts.

When looking at the characteristics of the currently unemployed by race, Black workers have a 32.9 percentage point higher predicted probability of unemployment, in line with the longer duration of unemployment seen for those who find re-employment. Asian workers have a 20.0 percentage point higher predicted probability of currently being unemployed than non-Hispanic White workers. Hispanic workers also have a higher predicted probability

Table 5: OLS and Probit Analysis of Unemployment

| | (1)<br>Unemployment Duration (Wks) | (2)<br>Unemployment Duration (Wks) | (3)<br>Unemployed | (4)<br>Unemployed |
|---|---|---|---|---|
| Female | 1.266** | 0.961* | -0.00490 | -0.0174 |
| | (0.411) | (0.358) | (0.0198) | (0.0202) |
| | | | | |
| Black | 4.220*** | 3.951*** | 0.329*** | 0.358*** |
| | (0.867) | (0.800) | (0.0352) | (0.0536) |
| | | | | |
| Asian | 0.289 | 1.067 | 0.209*** | 0.236*** |
| | (0.900) | (0.983) | (0.0457) | (0.0609) |
| | | | | |
| Hispanic | -0.0121 | -0.694 | 0.106*** | 0.0365 |
| | (0.485) | (0.484) | (0.0262) | (0.0334) |
| | | | | |
| Black*Female | | 0.659 | | -0.0643 |
| | | (0.991) | | (0.0741) |
| | | | | |
| Hispanic*Female | | 1.981* | | 0.201*** |
| | | (0.942) | | (0.0471) |
| | | | | |
| Asian*Female | | -1.821 | | -0.0689 |
| | | (1.281) | | (0.106) |
| | | | | |
| Constant | 34.40*** | 34.53*** | -1.152*** | -1.153*** |
| | (1.353) | (1.313) | (0.0598) | (0.0595) |
| R Squared | 0.138 | 0.138 | | |
| Year FE | Yes | Yes | Yes | Yes |
| Occ. FE | Yes | Yes | Yes | Yes |
| Controls | Yes | Yes | Yes | Yes |
| N | 29300 | 29300 | 36574 | 36574 |

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

This table reports the coefficients of an OLS analysis of unemployment duration for currently employed workers and the likelihood of current unemployment controlling for worker characteristics using the DWS. The sample period is 1984-2018.

of unemployment, and examining the interaction shows that this higher unemployment is concentrated among Hispanic women.

For those that find employment, table 6 reports results from a Probit analysis of the characteristics of workers were employed full-time again. Displaced women have a 31.5 percentage point higher predicted probability of transitioning from full-time to part-time work than men. These moves seem to be similarly motivated by the presence of children in the household, as seen in the labor force participation decision (analysis not shown). Asian workers are 22 percentage points less likely to move into part-time employment with no significant difference for other racial groups.

Wages

Finally, I turn to analysis of wages for re-employed workers. I calculate wage changes only for those employed full-time pre- and post-displacement. Since the DWS only reports weekly earnings for the duration of the sample, restricting to full-time workers minimizes

Table 6: Probit Analysis of Hours

|  | (1) Part-time | (2) Part-time |
|---|---|---|
| Female | 0.307*** | 0.333*** |
|  | (0.0204) | (0.0230) |
| Black | 0.0483 | 0.0966 |
|  | (0.0366) | (0.0515) |
| Asian | -0.226** | -0.185 |
|  | (0.0798) | (0.110) |
| Hispanic | 0.0586 | 0.0919* |
|  | (0.0322) | (0.0411) |
| Black*Female |  | -0.102 |
|  |  | (0.0741) |
| Hispanic*Female |  | -0.0894 |
|  |  | (0.0805) |
| Asian*Female |  | -0.0896 |
|  |  | (0.111) |
| Constant | -1.012*** | -1.025*** |
|  | (0.0828) | (0.0813) |
| Year FE | Yes | Yes |
| Occ. FE | Yes | Yes |
| Controls | Yes | Yes |
| N | 27154 | 27154 |

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

This table reports the marginal effects of a Probit analysis of part-time vs. full-time status for employed workers with controls for worker characteristics using the DWS. The sample period is 1984-2018.

variation in earnings from changes in hours. This allows changes in weekly earnings to reflect changes only in wages. I use the log difference in weekly earnings as an approximation for the percent change in wages. Table 7 shows that, after accounting for occupation, re-employed, full-time workers see similar losses across race and gender categories (and the interaction terms).

# 6 Policy

While job displacement can cause a large shock to earnings, government programs exist to bridge the gap. Unfortunately, the disparities seen in the job market also carry over to access to these services. Using the same sample and methods as in the previous section, I analyze the worker characteristics associated with receiving unemployment insurance post-displacement. Table 8 reports the take-up of unemployment insurance by race and gender.

Table 7: OLS Analysis of Wage Losses

| | (1) % Change Wage | (2) % Change Wage | (3) % Change Wage |
|---|---|---|---|
| Female | 1.984* | 1.490 | 2.045 |
| | (0.819) | (0.893) | (1.103) |
| | | | |
| Black | -1.170 | -1.815 | -0.954 |
| | (1.923) | (1.947) | (2.430) |
| | | | |
| Asian | 5.234 | 4.406 | 3.656 |
| | (2.941) | (3.013) | (3.091) |
| | | | |
| Hispanic | 2.477 | 2.516 | 3.323 |
| | (1.617) | (1.564) | (2.038) |
| | | | |
| Black*Female | | | -2.042 |
| | | | (2.819) |
| | | | |
| Hispanic*Female | | | -2.427 |
| | | | (3.119) |
| | | | |
| Asian*Female | | | 1.678 |
| | | | (5.439) |
| | | | |
| oth_fem | | | -12.37 |
| | | | (6.783) |
| | | | |
| Constant | 3.392 | -1.141 | -1.464 |
| | (2.901) | (3.010) | (3.037) |
| R Squared | 0.0456 | 0.0520 | 0.0524 |
| Year FE | Yes | Yes | Yes |
| Occ. FE | No | Yes | Yes |
| Controls | Yes | Yes | Yes |
| N | 10631 | 10543 | 10543 |

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

This table reports the percent change in wage following displacement for workers employed in full-time jobs pre- and post-displacement by race and gender in the DWS. The sample period is 1984-2018.

Even when controlling for observable characteristics including occupation, Hispanic workers have a 25 percentage point lower predicted probability of receiving unemployment insurance (UI). Looking at the interaction term, this low UI take-up primarily comes from low take-up by Hispanic men. Unlike documented disparities in unemployment insurance access for Black workers in other contexts, Black workers see the highest take-up of UI compared to workers from other racial groups. This may be due to the fact that qualification for UI benefits is more certain when entering unemployment from a layoff or plant closing. We see a similar pattern for women, who have an 11 percentage point higher predicted probability of receiving UI.

Expanding unemployment insurance access would be one way to begin to address disparities in displacement outcomes by race. At the same time, the policies that most effectively target disparities by race may not treat those by gender, and vice versa. When attempting

Table 8: Probit Analysis of Unemployment Insurance

| | (1)<br>Unemployment Insurance | (2)<br>Unemployment Insurance | (3)<br>Unemployment Insurance |
|---|---|---|---|
| Female | 0.0730*** | 0.116*** | 0.0950*** |
| | (0.0158) | (0.0197) | (0.0192) |
| | | | |
| Black | 0.0756** | 0.0869** | 0.0791* |
| | (0.0254) | (0.0282) | (0.0351) |
| | | | |
| Asian | -0.0223 | -0.0164 | -0.00269 |
| | (0.0396) | (0.0418) | (0.0491) |
| | | | |
| Hispanic | -0.257*** | -0.195*** | -0.249*** |
| | (0.0332) | (0.0258) | (0.0285) |
| | | | |
| Black*Female | | | 0.0215 |
| | | | (0.0485) |
| | | | |
| Hispanic*Female | | | 0.149** |
| | | | (0.0458) |
| | | | |
| Asian*Female | | | -0.0298 |
| | | | (0.0657) |
| | | | |
| Constant | -0.217** | 0.113* | 0.120* |
| | (0.0705) | (0.0564) | (0.0567) |
| Year FE | Yes | Yes | Yes |
| Occ. FE | No | Yes | Yes |
| Controls | Yes | Yes | Yes |
| N | 41369 | 40807 | 40807 |

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

This table reports the marginal effects of a Probit analysis of UI status following displacement with controls for worker characteristics. The sample period is 1984-2018.

to address gender gaps in displacement, policymakers should look to policies focused on maintaining labor force participation. Given that women with children face the highest risk of exiting the labor force, policies that provide childcare subsidies to displaced workers may be needed even into the worker's next job. Unemployment insurance, which ends once new work is found, does not address this need.

# 7 Conclusion

In macroeconomic models, economists often treat displacements as random events, independent of worker characteristics. Differences in exposure to displacement by race and gender put this assumption under scrutiny. Further work may wish to analyze the importance of our displacement assumptions for the results of models analyzing differences by race and gender.

Disparities in the labor market carry over into outcomes as well. Even if we don't see gaps

in wages, gaps exist in labor force participation, unemployment, and government support. Future research should work to causally measure the reasons for the observed disparities in job displacement and the implications for other labor market disparities.

# References

Bayer, P. and K. K. Charles (2018). Divergent Paths: A New Perspective on Earnings Differences Between Black and White Men Since 1940. *The Quarterly Journal of Economics 133*(3), 1459–1501.

Bertrand, M. and S. Mullainathan (2004). Are Emily and Greg More Employable Than Lakisha and Jamal? A Field Experiment on Labor Market Discrimination. *American Economic Review 94*(4), 991–1013.

Couch, K. A. and D. W. Placzek (2010). Earnings Losses of Displaced Workers Revisited. *American Economic Review 100*(1), 572–89.

Crossley, T. F., S. R. G. Jones, and P. Kuhn (1994). Gender Differences in Displacement Cost: Evidence and Implications. *The Journal of Human Resources 29*(2).

Daly, M. C., B. Hobijn, and J. H. Pedtke (2017). Disappointing Facts about the Black-White Wage Gap. *FRBSF Economic Letters 26*.

Daly, M. C., B. Hobijn, and J. H. Pedtke (2020). Labor market dynamics and black-white earnings gaps. *Economics Letters 186*.

Farber, H. S. (2017). Employment, Hours, and Earnings Consequences of Job Loss: US Evidence from the Displaced Workers Survey. *Journal of Labor Economics 35*(S1), S235–S272.

Field, A. J. and W. R. Winfrey (1997). Job Displacement and Reemployment in North Carolina: The Relative Experience of the Black Worker. *The Review of Black Political Economy 25*(3).

Gayle, G.-L., L. Golan, and R. A. Miller (2012). Gender Differences in Executive Compensation and Job Mobility. *Journal of Labor Economics 30*(4).

Goldin, C., S. P. Kerr, C. Olivetti, and E. Barth (2017). The Expanding Gender Earnings Gap: Evidence from the LEHD-2000 Census. *American Economic Review: Papers and Proceedings 107*(5), 110–114.

Greig, F., C. Wheat, G. Eckerd, M. O'Brian, and S. Banerjee (1994). Spending after Job Loss from the Great Recession through COVID-19: The Roles of Financial Health, Race, and Policy. *SSRN Working Paper 29*(2).

Hornstein, A. and M. Kudlyak (2019). Aggregate Labor Force Participation and Unemployment and Demographic Trends. *Federal Reserve of San Francisco Working Paper*.

Hu, L. and C. Taber (2011). Displacement, Asymmetric Information, and Heterogeneous Human Capital . *Journal of Labor Economics 29*(1), 113–152.

Hunt, J. (2016). Why do Women Leave Science and Engineering? *ILR Review 69*(1), 199–226.

Illing, H., J. F. Schmieder, and S. Trenkle (2021). The Gender Gap in Earnings Losses after Job Displacement. *Working Paper*.

Jacobson, L. S., R. J. LaLonde, and D. G. Sullivan (1993). Earnings Losses of Displaced Workers. *The American Economic Review 83*(4), 685–709.

Lang, K. and J.-Y. K. Lehmann (2011). Racial Discrimination in the Labor Market: Theory and Empirics. *Journal of Economic Literature 50*(4), 959–1006.

Le Barbanchon, T., R. Rathelot, and A. Roulet (2020, 10). Gender Differences in Job Search: Trading off Commute against Wage*. *The Quarterly Journal of Economics 136*(1), 381–426.

Mar, D. and P. M. Ong (1994). Race and Rehiring in the High-Tech Industry. *The Review of Black Political Economy 22*(3).

Mas, A. and A. Pallis (2017). Valuing Alternative Work Arrangements. *American Economic Review 107*(12), 3722–3759.

Wiswall, M. and B. Zafar (2018). Preference for the Workplace, Investment in Human Capital, and Gender. *The Quarterly Journal of Economics 133*(1), 457–507.