

# **Stratification After Job Displacement: The Role of Job Tasks, Queueing, and the Declining Demand for Routine Labor**

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**Abstract:** This paper examines inequalities in workers' ability to recover from job displacement—defined as involuntary job losses due to mass layoffs and plant closures. Millions of US workers are displaced each year and its disruptive effect on workers' careers is substantial. Still, the sociological understanding of inequalities in the effects of job displacement is underdeveloped. I develop and test a novel framework linking labor market queueing and sorting patterns to post-displacement earnings losses, arguing that inequalities arise from differences in how workers are reabsorbed into the labor market. Using data from the Current Population Survey (CPS) Displaced Workers Supplement (DWS) and Annual Social and Economic Supplement (ASEC), I employ a job-task-based approach to assess changes in earnings after displacement. I demonstrate that mobility into jobs with greater routine and manual task intensity exacerbates earnings losses, while transitions into abstract-task-intensive jobs mitigate them. Non-White and non-college-educated workers experience more severe earnings penalties due to disproportionate sorting into jobs with lower-paying task compositions. Moreover, I show that declining demand for routine labor has intensified inequalities in post-displacement recovery. These findings highlight the role of structural labor market changes in shaping inequalities after job displacement, contributing to broader discussions on labor market stratification.

## Introduction

Sociologists have long been interested in how workers' career trajectories serve as building blocks of social stratification and inequality. Much of this work focuses on inequalities that stem from differences in workers' career progression, characterized by income growth, transitions between jobs, promotions, and other markers of career advancement. Empirical work on career trajectories typically examines income inequality resulting from differences in the rates at which workers' incomes grow over the lifecycle (e.g. Cheng 2014, 2021) or the sequences of jobs that workers hold (Spilerman 1977; Abbott 1995; Sacchi, Kriesi, and Buchmann 2016; Mouw, Kalleberg, and Schultz 2024). Much less sociological work on stratification in the labor market considers inequalities resulting from disruptions to workers' career trajectories<sup>1</sup>. Disruptive events can interrupt workers' career progression by stifling income growth, pushing workers out of firm- or occupation-internal labor markets, or limiting workers' ability to participate in the labor market at all. Economic inequalities may emerge as the result of differences in workers' ability to recover from such interruptions to their career.

This paper examines economic inequalities in workers' ability to recover from career interruptions in the form of job displacement – involuntary job losses due to mass layoffs and plant closings. Millions of workers in the United States are displaced from their jobs every year. Estimates of three-year rates of job displacement range from 8 percent during good economic times up to 16 percent during recessions (Davis and von Wachter 2011; Farber 2017), and earnings losses following displacement are often substantial. On average, displaced workers are estimated to earn 25 to 35 percent less in the years immediately after displacement, and scarring effects can last decades (Jacobson, LaLonde, and Sullivan 1993; Kletzer 1998; Cha and Morgan

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<sup>1</sup> An important exception is the literature on the motherhood penalty

2010; Couch and Placzek 2010; Davis and von Wachter 2011; Farber 2017). Workers' ability to recover from job displacement also varies considerably. Some displaced workers see modest earnings gains upon reemployment while others experience massive losses, and these costs vary by typical dimensions of labor market stratification such as race and education (Neal 1995; Schoeni and Dardia 1997; Carrington and Fallick 2017; Farber 2017; Lachowska, Mas, and Woodbury 2020). Despite the relative commonality of job displacement and its tremendous short- and long-run economic costs, sociologists have paid little attention to job displacement and its consequences for stratification in the labor market (but see Brand 2006, 2015; Burgard, Brand, and House 2007; Brand and Burgard 2008; Brand and Simon Thomas 2014).

I advance our understanding of how job displacement affects labor market inequality through two major contributions. First, I develop and test a novel framework to explain between-group inequalities in the effect of job displacement on earnings as a function of group differences in labor market queueing and sorting patterns. Then, I examine how such between-group inequalities in workers' post-displacement employment and earnings have changed over the last half-century due to declining demand for routine labor.

Why is job displacement more costly for some workers than others? The magnitude of displaced workers' earnings losses is largely determined by the "degree of displacement" workers experience upon reemployment (Carrington and Fallick 2017), as characterized by displaced workers' tenure at their lost jobs as well as similarity between their pre- and post-displacement jobs in terms of industry, occupation, or location (Ong and Mar 1992; Carrington 1993; Jacobson et al. 1993; Neal 1995; Kletzer 1998; Couch and Placzek 2010; Carrington and Fallick 2017). Workers who find reemployment in new firms, occupations, or industries tend to experience greater earnings losses because the skills they developed at their old job do not

transfer well to their new job (Ong and Mar 1992; Jacobson et al. 1993; Neal 1995; Sullivan 2010; Lachowska et al. 2020). However, while most research on earnings losses among displaced workers due to skill non-transferability compares earnings between movers and stayers at the occupation or industry level, I advance a job-task-similarity approach to characterize the degree of displacement that workers experience on a continuous dimension (see also Poletaev and Robinson 2008; Gathmann and Schönberg 2010). This approach is preferable to the mover-stayer dichotomy because it recognizes that some between-occupation or between-industry transitions reflect a smaller shift in work activity than others and should therefore result in smaller changes in workers' earnings. I draw on the task framework developed by Autor, Levy, and Murnane (2003) and further elaborated in subsequent studies of technological change, economic polarization, and the changing wage structure (Autor, Katz, and Kearney 2006, 2008; Goos and Manning 2007; Acemoglu and Autor 2011; Firpo, Fortin, and Lemieux 2011; Autor and Dorn 2013; Goos, Manning, and Salomons 2014; Acemoglu and Restrepo 2020, 2022). This approach classifies jobs according to the routine, nonroutine abstract cognitive, and nonroutine manual task content of their primary work activities.

I use this task-based approach to model changes in earnings after job displacement, arguing that mobility into work characterized by routine and nonroutine manual labor drives down earnings while mobility into work characterized by abstract tasks mitigates earnings losses from displacement. Then, I draw on matching and queueing models of the labor market (Hodge 1973; Thurow 1975; Weiss 1980; Reskin and Roos 1990) to argue that non-White, female, and less-educated displaced workers are disadvantaged in the search for new jobs after job displacement, and consequently experience greater downward mobility in the task composition of their jobs which then translates into larger earnings losses. Finally, I argue that at the structural

level, declining demand for routine labor has amplified between-group inequalities in earnings losses among displaced workers by reducing available opportunities for workers to regain jobs in the middle of the earnings distribution and expanding opportunity for significant downward mobility into nonroutine manual labor towards the bottom of the earnings distribution.

Using data from the Current Population Survey (CPS) Displaced Workers Supplement (DWS) and Annual Social and Economic Supplement (ASEC), I find strong and consistent evidence that earnings losses after job displacement are greater for workers who experience larger increases in the routine and manual task intensity of their job and larger decreases in the abstract task intensity of their job. Black, Hispanic, female, and non-college-educated displaced workers experience greater earnings losses after displacement than comparable White, male, and college-educated displaced workers, and disadvantageous patterns of task sorting after displacement explain a substantial proportion of these inequalities for Black and non-college-educated displaced workers. Over time, task sorting explains a growing amount of inequality by education and a decreasing amount of inequality by race. Finally, declining demand for routine labor at the state level exacerbates inequalities in task sorting and earnings by race and education. Altogether, these results suggest that changes to displaced workers' job tasks, inequalities in task sorting, and structural shifts in the demand for routine labor combine to shape patterns of earnings losses after job displacement.

## **Background**

### **Job Displacement and Career Disruption**

#### *Career Trajectories and Disruptive Events*

The career is a core subject of analysis in sociological studies of intragenerational mobility (Spilerman 1977; Rosenbaum 1979; Rosenfeld 1992; Kalleberg and Mouw 2018). Broadly, research on intragenerational mobility defines careers as the sequence of jobs workers hold over their lifetime and examines how the duration of workers' attachment to specific jobs or firms and the patterns of workers' transitions between jobs shape inequality in workers' earnings and other job rewards over the lifecycle (Kalleberg and Mouw 2018). The prototypical "orderly" career is characterized by enduring attachments to a single employer and progression through an ordered and predictable sequence of related, hierarchically arranged occupations (Wilensky 1961). Sociologists recognize that such an orderly career is relatively rare (e.g. Wilensky 1961; Kalleberg and Sørensen 1979) and have examined how various forms of disorderliness in workers' careers affect economic inequality over the life course.

Research on disorderly careers often considers how inequality results from differences in the extent to which workers' job sequences over the career reflect a clear progression through related, ordered occupations. Much of this work examines how rates of wage growth over the career vary depending on whether workers progress up the job ladder within a firm-internal labor market or transition between firms, or whether workers progress up occupation-internal labor markets where clusters of occupations with related skills are linked both within and across firms (Althausen and Kalleberg 1981; Altonji and Shakotko 1987; Mortensen 1988; Althausen 1989; Petersen and Spilerman 1990; Abbott 1995; DiPrete, Goux, and Maurin 2002; Shaw and Lazear 2008; Sacchi et al. 2016; Cheng and Park 2020; Lin and Hung 2022; Mouw et al. 2024). This body of work has generated tremendous insight into how workers move between positions in the labor market and the consequences of such mobility for wages and inequality.

While this literature focuses on inequalities stemming from differences in workers' job sequences, rates of progression within internal labor markets, or mobility out of internal labor markets, it tends to remain agnostic towards the causes of such mobility. Job sequences over workers' careers do not necessarily reflect immediate voluntary transitions from one position to another. In many cases, job exits are driven by disruptive events that interrupt workers' progression along a career line and transitions into new jobs may not be immediate. These disruptive events may include childbirth or other familial changes that lead workers to temporarily exit the labor force, disability leading to temporary or permanent changes in individuals' capacity to work, or involuntary job losses that thrust workers back into the labor market to search for new employment. In any case, differences in workers' recovery from career interruptions can be characterized by their ability to reenter the labor market along the same job, occupational, or income trajectory as when they exited.

#### *The Short- and Long-Run Costs of Job Displacement*

Job displacement is a highly disruptive and costly event that millions of workers experience every year in the United States. Job displacement refers to job losses due to layoffs, plant closings, restructuring, and other factors out of individual workers' control and not associated with their performance. On average, displaced workers experience long periods of unemployment, earnings losses on the order of 25 to 33 percent upon reemployment, and persistent reductions in earnings for decades after displacement (Ruhm 1987; Howland and Peterson 1988; Jacobson et al. 1993; Gardner 1995; Cha and Morgan 2010; Couch and Placzek 2010; Davis and von Wachter 2011; Farber 2017). However, displaced workers vary substantially in their ability to recover from job displacement (Carrington and Fallick 2017). Schoeni and



Dardia (1997) show that between 1989 and 1994, the bottom quartile of displaced workers in California experienced a roughly 50 percent reduction in earnings while the top quartile actually increased their earnings by about 20 percent. Similarly, Lachowska, Mas, and Woodbury (2020) estimate that the bottom quintile of Washington's displaced workers from 2008 to 2010 lost about 30 percent of their earnings while the top quintile experienced no change.

However, despite the widespread incidence of job displacement, its tremendous economic costs, and intense stratification in workers' ability to recover after job displacement, studies of the consequences of job displacement have largely remained under the purview of labor economists rather than sociologists. One important exception is work by Brand, Burgard, and colleagues, which examines the consequences of job displacement for workers' health and wellbeing (Burgard et al. 2007; Brand, Levy, and Gallo 2008), social participation (Brand and Burgard 2008), and non-monetary job rewards such as authority and benefits (Brand 2006). Very little work by sociologists examines the effect of job displacement on earnings or inequalities in workers' earnings losses due to job displacement. Mouw and Kalleberg (2010) examine the role of changing patterns of downward between-employer mobility, which they interpret as a proxy measure of job displacement, in rising wage inequality and find that downward job mobility explains a meaningful proportion of the rise in wage inequality between 1985 and 2005. Regarding inequality in the costs of displacement, Spalter-Roth and Deitch (1999) find inequalities in earnings losses at the intersection of race and gender among workers displaced in the mid-1990s. While sociological research on job displacement has identified non-economic costs of displacement as well as some inequalities in earnings losses after displacement, a sociological framework for understanding inequalities in the costs and consequences of job displacement remains underdeveloped.

## **The Unequal Costs of Job Displacement**

### *Degrees of Displacement*

Much of the economic cost of job displacement can be explained by the “degree of displacement” (Carrington and Fallick 2017) that workers experience. Broadly, this can be characterized by extent to which a worker’s new job reflects a departure from their original career trajectory. Workers’ progression through an “orderly” career depends on investing in and accumulating skills that are productive not only in their current job but also in higher-level jobs in their firm- or occupation-internal labor market (Spilerman 1977; Althausser and Kalleberg 1981; Sacchi et al. 2016; Mouw et al. 2024). Because job displacement is both involuntary and cannot be well anticipated as it is not tied to individual workers’ performance, and because displaced workers have demonstrated a preference to remain at their lost job rather than searching for a new job, displaced workers are likely to have invested in skills whose value diminishes somewhat upon finding new employment. The effect of job displacement on earnings is therefore expected to depend, at least partially, on the extent to which skill investments at workers’ lost jobs transfer to their new jobs. Indeed, there is substantial evidence that earnings losses are greater among workers who change firms, occupations, or industries compared to those who remain in similar work, as well as among high-tenure workers who have accumulated a substantial amount of firm-specific capital (Addison and Portugal 1989; Ong and Mar 1992; Carrington 1993; Jacobson et al. 1993; Neal 1995; Couch and Placzek 2010; Carrington and Fallick 2017; Moore and Scott-Clayton 2019; Lachowska et al. 2020).

### *A Task-Based Approach*

Previous work on job displacement has characterized lost investments in specific skills by comparing changes in earnings for movers and stayers in firms, occupations, and industries. This approach captures the general idea that skill requirements differ between jobs and that job transitions should be associated with some loss in investment in skills. But this approach also suffers from its inability to characterize the degree to which skills transfer between jobs. Studies that use the mover-stayer dichotomy as a proxy measure of lost specific capital implicitly assume that all job-movers experience the same level of skill transfer between jobs. This approach equates all transitions between jobs regardless of their similarity, implying that specific skills cannot accumulate as workers advance up an occupational ladder (e.g. skills developed as an assistant manager are lost when a worker become a manager) and that specific skills cannot transfer when workers move laterally between occupations (e.g. skills specific to bus drivers do not transfer to delivery truck drivers). In reality, it seems clear that transitions between firms, occupations, and industries vary substantially in the extent to which they correspond to lost investments in specific skills.

Recent work in sociology and labor economics has considered how skill similarities between occupations shape patterns of occupational mobility and earnings growth. Across this literature, analysts have used job task data from O\*NET to characterize occupational skill requirements, measure skill similarities between occupations, and examine the effects of skill transferability on occupational mobility and earnings. Tasks are specific work activities that produce some output. Most tasks (e.g. preparing budgets, evaluating personnel, analyzing data) are somewhat general in that they are used in multiple firms, occupations, and industries. Recent advances in sociological studies of occupational mobility have developed a network conception of the occupational structure and identified skill similarities between occupations as key

determinants of occupational mobility (Cheng and Park 2020; Villarreal 2020; Lin and Hung 2022). Mouw et al. (2024) also demonstrate that skill linkages between occupations are an important determinant of upward mobility out of low-wage jobs. Similarly, recent work on job displacement in labor economics has argued that job tasks are better suited to characterize skill transferability between jobs, demonstrating that earnings losses among displaced workers are sensitive to the task-similarity of workers' lost and new jobs (Gibbons and Waldman 2004; Poletaev and Robinson 2008; Gathmann and Schönberg 2010; Yamaguchi 2012).

Analysts differ in how they group and classify job tasks. I follow the literature on (routine) task-biased technological change (Autor et al. 2003; Acemoglu and Autor 2011; Firpo et al. 2011; Autor and Dorn 2013; Autor and Handel 2013; Goos et al. 2014; Acemoglu and Restrepo 2022) and distinguish between three types of tasks: routine tasks, nonroutine abstract tasks, and nonroutine manual tasks. Routine tasks follow rote patterns and can be easily automated. Jobs characterized by routine tasks are typically found in the lower-middle segment of the earnings distribution and are often occupied by individuals with middle levels of education. Examples of routine jobs include manufacturing production, bookkeeping, and clerical work. Abstract tasks involve strategic planning, directing labor, creativity, analysis, coordination, and problem-solving, and typically characterize jobs held by highly educated workers towards the top of the earnings distribution. Occupations primarily characterized by abstract tasks include executives, managers, or white-collar professionals. Last, manual tasks typically characterize work in occupations towards the bottom of the earnings distribution. These occupations carry out tasks that involve dynamic interpersonal interactions or that require significant physical dexterity. Jobs characterized by manual tasks are often found in the service sector and include sales associates and home health assistants.

This classification of job tasks maps nicely onto patterns of employment polarization and earnings inequality. The argument in the routine-biased technological change literature is that advances in computing technology most readily facilitate the substitution of human labor with technology in routine tasks that follow well-defined procedures and processes. At the same time, technological advances complement high-skill abstract tasks and neither substitute nor complement nonroutine manual tasks.

Over the last half century, changes to the task structure of the US labor market played an outsized role in shaping trends in employment and inequality, explaining over half of the increase in overall inequality and driving patterns of how workers are distributed across jobs (Autor et al. 2008; Autor and Dorn 2009; Acemoglu and Restrepo 2022). Consistent with routine-biased technological change, employment shares grew significantly in both high-paying occupations characterized by abstract tasks and low-paying occupations primarily comprised of manual tasks while employment declined in middle-paying routine-task-intensive jobs. Job-to-job transitions into routine occupations have declined substantially (Cortes et al. 2020) while earnings have grown some among low-end manual occupations and even more high-end abstract occupations, driving rising income inequality over the last few decades (Autor et al. 2006, 2008; Mouw and Kalleberg 2010b; Autor and Dorn 2013; Goos et al. 2014). The routine, abstract, and manual task content of jobs is therefore likely to capture meaningful distinctions in the demand for and returns to different types of work that have important implications for changes in earnings experienced by displaced workers transitioning between jobs. Rising demand for and returns to abstract tasks should result in positive earnings effects of transitions into abstract task intensive work, while transitions into lower-paying routine or manual task intensive work should result in negative earnings effects.

*Hypothesis 1a: A positive change in abstract task intensity is associated with an increase in displaced workers' earnings relative to their lost job.*

*Hypothesis 1b: A positive change in routine task intensity is associated with a decrease in displaced workers' earnings relative to their lost job.*

*Hypothesis 1c: A positive change in manual task intensity is associated with a decrease in displaced workers' earnings relative to their lost job.*

### *Between-Group Inequalities After Job Displacement*

Workers' ability to recover from job displacement depends on their ability to find new, high-quality employment in jobs whose tasks are compatible with their skillset. Matching models of the labor market can be used to describe displaced workers' search for new employment (Jovanovic 1979; Sørensen and Kalleberg 1981; Coleman 1991). In a standard search model, workers search for employment across a set of jobs where match quality between worker and firm is heterogeneous, i.e. some worker-job matches are more productive than others. While workers and firms consider a broad set of factors in the matching process, one key characteristic of jobs that workers and firms consider is the bundle of tasks performed at the job. Workers compete to fill job vacancies that offer the highest return to their skills while firms offer wages based on the expected productivity of the match (Yamaguchi 2012). In equilibrium, the wage offer is equal to the marginal product of the match.

Queueing theory can be used to describe how matches in the labor market are determined and is often used to model between-group inequalities in labor market matching processes (Thurow 1969; Hodge 1973; Weiss 1980; Reskin and Roos 1990). In a queueing model, hiring firms rank jobseekers (the labor queue), jobseekers rank job openings (the jobs queue), and firms

make offers down the labor queue until the offer is accepted. In task-based models of the labor market, firms rank jobseekers by the expected compatibility between jobs' task demands and workers' skills (Acemoglu and Autor 2011). Firms have limited information about workers and therefore rely on observable signals of workers' skill endowments and ability to learn new skills to make inferences about workers' expected productivity at a job. Such statistical discrimination based on job applicants' observable traits (Phelps 1972; Arrow 1973; Spence 1973; Aigner and Cain 1977; Altonji and Pierret 2001) may generate between-group inequalities in labor market matching.

Rising demand for complex cognitive skills and decelerating growth in educational attainment has driven a rapidly rising education earnings premium (Lemieux 2006; Goldin and Katz 2009; Autor 2014). Although educational credentials and skills are distinct from one another, educational attainment is often considered an important signal of a worker's skills and ability to learn. Educational attainment is a particularly important signal of productivity before hiring because employers have not yet observed workers' productivity on the job (Spence 1973; Thurow 1975; Altonji and Pierret 2001). Because higher educational attainment is associated with higher expected productivity in cognitive and analytical tasks, I expect college-educated displaced workers to rank higher in the labor queue and find new employment in jobs that are characterized by greater abstract task intensity and less routine and manual task intensity.

Statistical discrimination, taste-based discrimination, and differences in worker preferences can also generate inequalities between demographic groups in labor queues. A large body of evidence has demonstrated that employers tend to prefer to hire White workers over otherwise similar Black and Hispanic workers (Kirschenman and Neckerman 1991; Bertrand and Mullainathan 2004; Pager, Bonikowski, and Western 2009; Gaddis 2015; Quillian et al. 2017;

Kline, Rose, and Walters 2022). Such patterns could be explained by employers' beliefs that Black and Hispanic workers are, on average, less productive than White workers (Phelps 1972; Arrow 1973; Aigner and Cain 1977), employers' greater uncertainty regarding the productivity of nonwhite workers relative to White workers (Oettinger 1996), or employers' general preference to hire White workers (Becker 1957). Employers' beliefs and preferences regarding racial differences in productivity may underlie racial patterns of sorting on occupational tasks. For example, Black workers tend to be highly concentrated in occupations with high manual task intensity and underrepresented in occupations that rely on analytical tasks (Hirsch and Macpherson 2004).

Similar arguments apply to differences in job matching for men and women. Empirical evidence suggests that employers do reserve some types of work for women and other types for men net of individual differences in productivity due to some combination of sex differences in average worker characteristics and stereotypes about productivity and the sex-typing of jobs (Bielby and Baron 1986; England 1992). Women tend to be overrepresented in clerical work and other similar routine occupations, occupations that rely on analytical tasks, and underrepresented in manual labor (Bielby and Baron 1986; Cassidy 2017; Cortes and Pan 2018). Altogether, these patterns suggest that non-White, female, and less educated workers may experience disadvantageous task sorting after job displacement relative to White, male, and college-educated displaced workers.

*Hypothesis 2a: Compared to non-college-educated displaced workers, college educated displaced workers sort into more abstract-task-intensive and less routine- and manual-task-intensive jobs.*



*Hypothesis 2b: Compared to White displaced workers, non-White displaced workers sort into less abstract-task-intensive and more routine- and manual-task-intensive jobs.*

*Hypothesis 2c: Compared to male displaced workers, female displaced workers sort into more abstract- and routine-task intensive and less manual-task-intensive jobs.*

Because I expect to observe task sorting by education, race, and gender, and because job tasks are a crucial determinant of wages and earnings, I expect that differences in task sorting after displacement explain a significant amount of inequality in changes in earnings after displacement.

*Hypothesis 3: Task sorting explains a significant amount of inequality by education, race, and gender in proportional earnings changes after displacement.*

### *Declining Demand for Routine Labor, Task Sorting, and Inequality*

Sørensen (1975, 1977) argues that to fully understand the relationship between mobility over the career and inequality, analysts must consider not only how differences in individuals' traits affect attainment over the career, but also how structural features of the labor market – the demand for different types of labor, job openings, and other barriers to mobility – affect workers' opportunity for mobility and attainment. I argue that economic polarization and associated changes in the job and task structure of the US labor market substantially changed the opportunity structure for workers' ability to find high quality employment after displacement.

Displaced workers' economic recovery is influenced by labor market conditions.

Earnings losses among displaced workers are highly countercyclical, ranging from about 5

percent during periods with strong labor markets to almost 40 percent during the Great Recession (Gardner 1995; Davis and von Wachter 2011; Farber 2015, 2017), and these effects are felt strongly at the local labor market level. Previous work has shown that local economic downturns exacerbate earnings losses among displaced workers (Howland and Peterson 1988; Carrington 1993; Jacobson et al. 1993).

Automation and declining demand for routine labor led to polarization in the job structure, thereby changing the set of jobs available to displaced workers and affecting the opportunity structure for economic recovery after displacement. When workers are displaced from routine jobs, some move into higher-paying abstract-task-intensive jobs, but most typically move into lower-paying jobs that are more manual-task-intensive (Autor and Dorn 2009). Acemoglu and Restrepo (2022) demonstrate that the wages of a given demographic group are strongly tied to the extent to which they experience task displacement, or the share of tasks that a demographic group loses due to automation.

Structural shifts in labor demand due to economic polarization have been particularly disadvantageous for Black, and especially Black male workers. Historically, Black employment in routine-intensive jobs in sectors like manufacturing and public administration was an important factor in promoting the formation of Black working and middle classes (Landry 1987; Wilson 1996; Wilson, Roscigno, and Huffman 2013). The decline of US manufacturing played a significant role in amplifying racial inequality in earnings and employment (Wilson 1987; Wilson, Tienda, and Wu 1995; Western and Pettit 2005). As the demand for routine labor declines, I expect that Black-White inequalities in earnings losses from job displacement grow. Hispanic workers, on the other hand, did not benefit as much from employment in high-paying industrial jobs (McCall 2001). Still, Holzer (1998) finds that technological advances and rising

demand for cognitive and technical skills contributes to declines in Hispanic wages relative to Whites. As such, I also expect that Hispanic-White gaps in earnings losses after job displacement grow as the demand for routine labor declines.

*Hypothesis 4a: Declining demand for routine labor increases Black- and Hispanic-White gaps in task sorting and earnings losses after job displacement.*

Declining demand for routine labor is also likely to affect gendered patterns of task sorting and earnings losses after job displacement. Since the 1970s, patterns of occupational sorting among men and women changed significantly. Economic restructuring and the decline of manufacturing production jobs were particularly detrimental to men's occupational attainment. While some men moved out of relatively high-paying routine-oriented jobs in manufacturing production and into high-paying managerial and professional work, a larger proportion moved into low-paying service work. On the other hand, women have generally been more successful than men in moving out of routine jobs and into well-paying jobs characterized by cognitive abstract tasks (Black and Spitz-Oener 2010; Matysiak, Hardy, and van der Velde 2024). While women also left routine-intensive jobs in clerical and administrative work, women made substantial inroads into higher-paying traditionally male professional and managerial jobs and also became less overrepresented in service work (Blau 2025). As a result, I expect that declining demand for routine labor will close gender gaps in recovery from job displacement.

*Hypothesis 4b: Declining demand for routine labor reduces gender gaps in task sorting and earnings losses after job displacement.*

Economic polarization has also driven rapidly rising inequalities between individuals with and without college degrees. Rising demand for high-level skills has substantially increased the earnings premium for education – over the last 40 years, the earnings gap between high

school and college graduates has roughly doubled, accounting for about half to two-thirds of the total increase in inequality from the mid-1970s to the mid-2000s (Lemieux 2006; Firpo et al. 2011; Autor 2014). Further, as occupational skill demands change in tandem with technological advances (Spitz-Oener 2006), highly educated workers may have skills better suited for transitioning from their lost job into relatively well-paying occupations.

*Hypothesis 4c: Declining demand for routine labor increases inequalities by education in task sorting and earnings losses after job displacement.*

## **Data and Methods**

### **Data**

These analyses use data from two subsamples of the CPS obtained from IPUMS (Flood et al. 2024). The first sample is from the DWS. The DWS is fielded annually and collects data from individuals who lost their job in the last few years. The DWS collects information on workers' lost jobs, their job search activities, and their current jobs if they are employed at the time of the survey. I restrict the analytic sample to prime age civilians ages 25 to 54 displaced from full-time jobs to capture workers who are strongly attached to the labor market. The definition of a displaced worker has changed between survey years. For these analyses, I limit the sample to workers who meet the most restrictive definition of displacement. This definition has been in place since 1998 and can be applied to previous survey rounds. Under this definition, displaced workers are defined as individuals who lost their job in the previous three years due to layoffs or shutdowns, were not self-employed, and do not expect to be recalled to work in the next six months. I use data from the 1984 to 2020 waves of the DWS to model displaced workers' task

and earnings mobility. This covers displaced workers who lost their jobs between 1980 and 2019. I further limit the sample to individuals with non-missing data on all analytic variables.

Measures of state-level labor market structure are constructed using the ASEC. The ASEC is larger than most monthly CPS samples and collects additional data on workers' jobs, earnings, benefits, and other socioeconomic indicators. I limit the ASEC sample to employed individuals.

## Key Variables

### *Dependent Variables*

The main outcome of interest is the *proportional change in real weekly earnings* between displaced workers' lost and current jobs (Farber 2017), defined as:

$$\Delta W = \frac{W_1 - W_0}{W_0} \quad (1)$$

where  $W$  refers to real weekly earnings and subscripts 0 and 1 refer to respondents' lost and current jobs. Weekly earnings are standardized to year-2000 dollars. Top-coded earnings are multiplied by 1.4.

### *Occupations and Job Tasks*

The main independent variables measure displaced workers' *change in job task intensity*, which is defined as the difference in (abstract, routine, or manual) task intensity at respondents' current and lost job. The coding of occupational tasks and task intensity is described below.

*Job tasks* are measured at the detailed occupation level using measures developed by Autor and Dorn (Autor and Dorn 2008, 2009, 2013; Dorn 2009). Building on work by Autor, Levy, and Murnane (ALM) (2003) and Weiss (2008), and theoretically motivated by an interest

in skill- and routine-biased technological change, Autor and Dorn use data from the Dictionary of Occupational Titles (DOT) (United States Department of Labor 1977) to develop occupation-level job task ratings along three dimensions. Each occupation is scored on a scale of 0 to 10 in its use of *abstract*, *routine*, and *manual* tasks (Autor et al. 2003; Dorn 2009; Autor and Dorn 2013). Following ALM (2003) and Autor, Katz, and Kearney (2006), Autor and Dorn's occupation-level routine task index is an average of two DOT variables for an occupation's demand for "sets limits, tolerances, and standards" to capture the demand for routine cognitive tasks and "finger dexterity" to capture routine motor tasks. The abstract task index is the average of two DOT variables: "direction control and planning" and "GED math". Manual task ratings are derived from the DOT variable "eye-hand-foot coordination". More detailed information regarding occupational task coding can be found in Dorn (2009).

Task ratings are matched to respondents' detailed occupation code. The CPS records respondents' occupations using US Census occupational coding schemes. Between 1984 and 2020, the US Census updated their occupation codes five times. With each change in coding schemes, some occupations disappear, some new occupations appear, some occupations are merged, and others are broken apart. These coding changes make it difficult to examine changes within occupations over time. To address this issue of comparability over time, I code *occupation* using a standardized occupational coding scheme developed by Dorn (Dorn 2009; Autor and Dorn 2013) and subsequently used in numerous economic studies of occupations and inequality. The Dorn occupation codes provide a balanced panel of occupations that are consistently defined across US Census occupation coding schemes, allowing analysts to make consistent comparisons within and between occupations over time. These codes result primarily from aggregating detailed occupation codes. These analyses use both detailed occupation codes at the 3-digit level

and aggregate 1-digit occupation codes. DWS respondents are matched to Dorn occupations and Dorn occupations are matched to Autor and Dorn task ratings using crosswalks provided as a supplement to Autor and Dorn (2013).

Following Autor and Dorn (2013), *task intensity* is defined as the difference between the logarithm of a detailed occupation's score on the focal job task and the logarithm of the occupation's score on other job tasks. For example, routine task intensity is the logarithm of an occupation's routine task score minus the logarithm of its abstract task score minus the logarithm of its manual task score. Measures of task intensity are then standardized to a mean of zero and a 1980-employment-weighted cross-occupation standard deviation of one. A state's *routine employment share* is defined at the state-year level and refers to the proportion of employees within a state who are employed in occupations above the employment-weighted 66<sup>th</sup> percentile of routine task intensity in 1980. State-level routine employment share is matched to respondents based on their year of job displacement.

#### *Other Covariates From the DWS*

*Race* denotes whether a respondent's race is White, Black, Hispanic, or Other. Gender is coded 1 for *female* and education is measured using a binary indicator for if a respondent has obtained a *college* degree. Analyses control for *marital status* (unmarried, married), *potential experience* (age – years of education – 6), years of *tenure* at respondents' lost job, *industry* of the lost job (1-digit aggregate of detailed industry codes), if the respondent *moved* since losing their job, and the total number of *weeks unemployed*. Heckman-corrected models model selection using a three-level categorical variable indicating whether the respondent has no children, has at least one child younger than 5, or has children all 5 years or older.

## Empirical Strategy

The empirical analysis proceeds in four stages. First, I examine the association between post-displacement changes in job task intensities and changes in earnings. Next, I assess how post-displacement changes in job task intensities differ by race, gender, and education. Then, I determine how much between-group inequality in post-displacement changes in earnings can be explained by differences in task sorting. Finally, I examine how changes in the state-level demand for routine labor affect between-group inequalities in task sorting and earnings changes. All analyses use DWS weights provided by IPUMS.

### *Changing Job tasks and Earnings*

The relationship between changes in the task composition of workers' jobs and changes in earnings after displacement is modeled using OLS:

$$\Delta W_i = \beta_0 + \beta_1(\Delta A/R/MTI)_i + \beta_2(\Delta A/R/MTI)_i^2 + \ln W_{i0} + T_{i0}\delta + \lambda Z_{i0} + \gamma X_{it} + \pi_s + \eta_t + \epsilon_i \quad (2)$$

$\Delta W_i$  refers to the proportional change in real weekly earnings. The coefficients of interest are  $\beta_1$  and  $\beta_2$ , which describe the partial effect of a change in abstract, routine, or manual task intensity on earnings. Analyses control for the logarithm of weekly earnings ( $\ln W_{i0}$ ) and abstract, routine, and manual task ratings ( $T_{i0}\delta$ ) at workers' lost jobs.  $Z_{i0}$  contains characteristics of workers' lost jobs including tenure, occupation, and industry.  $X_{it}$  is a vector of individual-level controls including gender, education, marital status, potential experience and its square, whether the respondent moved since displacement, and total weeks unemployed.  $\pi_s$  is state fixed effects and



$\eta_t$  is year of job displacement fixed effects. Separate regressions are run for each decade and for each type of task intensity (abstract, routine, or manual).

### *Between-Group Inequalities in Task Sorting*

OLS models of inequalities in task sorting by race, gender, and education are specified as:

$$\Delta A/R/MTI_i = \beta_0 + \beta_1(\text{Race})_i + \beta_2(\text{Female})_i + \beta_3(\text{College})_i + \beta_4 \ln W_{i0} + T_{i0}\delta + \lambda Z_{i0} + \gamma X_{it} + \pi_s + \eta_t + \epsilon_i \quad (3)$$

where coefficients  $\beta_1$ ,  $\beta_2$ , and  $\beta_3$  describe inequalities in how workers' job tasks change after displacement, net of individual demographic characteristics, pre-displacement job characteristics, and state and year of job displacement fixed effects. Separate models are run for each decade and type of task intensity.

Because change in job task intensity is only observed for displaced workers who become reemployed, I also estimate Heckman-style models (Heckman 1979) to account for selection into reemployment. Selection into reemployment is modeled using all variables included in Equation 3 plus a three-level categorical variable that indicates whether respondents have no children, any children under 5, or only children 5 years and older. This selection variable must affect respondents' likelihood of becoming reemployed without affecting task sorting and earnings through another pathway. Household composition and family structure are commonly used in Heckman-style models because children in the household change the value of parents' time, thereby affecting their decision to work or stay at home (e.g. Heckman 1974, 1979). These models estimate between-group inequalities in task sorting for all workers, including those who remain unemployed.

*Mediation of Between-Group Inequality in Earnings Changes by Job Task Sorting*

Next, I consider the extent to which between-group inequalities in task sorting explain inequalities in earnings changes after job displacement. I follow Baron and Kenny's (1986) standard approach to mediation analysis. First, I model inequalities in proportional changes in real weekly earnings following job displacement using OLS:

$$\Delta W_i = \beta_0 + \beta_1(\text{Race})_i + \beta_2(\text{Female})_i + \beta_3(\text{College})_i + \beta_4 \ln W_{i0} + T_{i0}\delta + X_{it}\gamma + Z_{i0}\lambda + \pi_s + \eta_t + \epsilon_i \quad (4)$$

where all controls are the same as Equations 1 and 2.  $\beta_1$ ,  $\beta_2$ , and  $\beta_3$  are the “total effects” of race, gender, and education on proportional change in real weekly earnings, net of controls.

To determine how much of racial, gender, and educational inequalities in changes in earnings operates through inequality in task sorting, I assess how much estimates of  $\beta_1$ ,  $\beta_2$ , and  $\beta_3$  change after including additional controls for the difference in task intensities between workers' current and lost jobs:

$$\Delta W_i = \beta_0 + \beta_1(\text{Race})_i + \beta_2(\text{Female})_i + \beta_3(\text{College})_i + \beta_4 \ln W_{i0} + T_{i1}\theta + T_{i0}\delta + \gamma X_{it} + \lambda Z_{i0} + \pi_s + \eta_t + \epsilon_i \quad (5)$$

where  $T_{i1}$  is a vector of abstract, routine, and manual task ratings of workers' current jobs. The difference in estimates of  $\beta_1$ ,  $\beta_2$ , and  $\beta_3$  from Equations 3 and 4 is the “indirect effect” and captures the extent to which task sorting explains inequalities in earnings changes after displacement. The estimates of  $\beta_1$ ,  $\beta_2$ , and  $\beta_3$  from Equation 4 are the “direct effect” of race, gender, and education, net of all controls. Mediation analyses are conducted using the `-khb-` command in Stata (Kohler, Karlson, and Holm 2011).

*Moderation by local labor market structure*

Finally, I examine how within-state changes in the routine share of employment affect between-group inequalities in changes in task intensity and earnings after job displacement using OLS:

$$\Delta Y_i = \beta_0 + \beta_1(\text{Race})_i + \beta_2(\text{Female})_i + \beta_3(\text{College})_i + \beta_4(\text{RSH})_s + \beta_5(\text{Race}_i \times \text{RSH}_s) + \beta_6(\text{Female}_i \times \text{RSH}_s) + \beta_7(\text{College}_i \times \text{RSH}_s) + \beta_8 \ln W_{i0} + T_{i0}\delta + \gamma X_{it} + \lambda Z_{i0} + \pi_s + \eta_t + \epsilon_i \quad (6)$$

where  $\text{RSH}_s$  is the state-level share of employment in routine-intensive occupations.

## Results

### Descriptive Statistics

#### *The DWS Sample*

Unweighted descriptive statistics by decade for the DWS sample are presented in Table 1. The sample is roughly 10 percent Black and 40 percent female, with female workers making up a larger proportion of displaced workers in more recent decades. While only 7 percent of displaced workers in the 1980s were Hispanic, that proportion more than doubles to 15 percent in the 2010s. The proportion of respondents who are married or who have children has declined since the 1980s while educational attainment has risen considerably. A little over two-thirds of displaced workers are reemployed by the survey date. About 15 percent moved after displacement and job search typically lasts about half a year.

#### *Observed Patterns of Task Sorting and Changes in Earnings*

Figure 1 presents smoothed weighted polynomial plots of the relationship between changes in task intensity and changes in earnings after displacement. These descriptive plots clearly demonstrate that degree of task displacement is strongly associated with earnings losses. On

average, individuals with smaller changes to the abstract, routine, and manual task intensity of their job – regardless of task type or whether changes are positive or negative – experience smaller earnings losses than individuals who experience larger changes in their job’s task composition. While smaller changes in job task intensity result in smaller earnings losses than large changes, there is suggestive evidence that different types of job tasks have different effects on earnings. Individuals who experience large increases in the abstract task intensity of their work experience smaller earnings losses than those who experience large decreases in abstract task intensity. The opposite is true of routine and manual task intensity. Large increases in routine and manual task intensity are associated with larger earnings losses compared to large decreases in routine and manual task intensity.

Descriptive patterns of changes in workers’ earnings and job task intensities by race, gender, and education are presented in Table 2. On average, Black, female, and non-college-educated displaced workers experience larger earnings losses than White, male, and college-educated displaced workers. These patterns in earnings inequalities map well onto patterns of task sorting. Compared to White displaced workers, Black displaced workers experience larger reductions in abstract and routine task intensity and larger increases in manual task intensity. After the 1980s, the same patterns hold for women compared to men. College-educated displaced workers also appear to be advantaged in changes in routine and manual task intensity compared to non-college-educated displaced workers.

### *Task Sorting and Earnings*

Moving beyond descriptive statistics, I turn to regression analyses to assess Hypothesis 1, which predicts that differences in the task composition of displaced workers’ lost and current jobs are

associated with changes in earnings. Table 3 contains coefficients from regressions of proportional change in earnings on change in task intensity and its square for each decade from 1980 to 2019, net of control variables. Predicted proportional changes in earnings by change in task intensity are presented in Figure 1. Across all decades, an increase in the abstract intensity of a displaced worker's occupation is associated with reduced earnings losses. The positive coefficient on change in abstract task intensity and negative coefficient on its square indicate that the proportional change in earnings increases at a decreasing rate with change in abstract intensity, meaning that large decreases in abstract task intensity result in especially large earnings losses. On the other hand, displaced workers who move into jobs characterized by higher intensity of routine or manual tasks experience larger earnings losses. Earnings losses grow at an increasing rate with changes in routine and manual task intensity, indicating that larger increases in routine and manual task intensity are associated with even larger earnings losses. The earnings penalty to increased routine task intensity becomes more severe over time, while the penalty associated with increased manual task intensity diminishes over time.

#### *Between-Group Differences in Task Sorting*

Hypotheses 2a-c predicts that non-White, female, and less educated workers will be disadvantaged in task sorting after job displacement. Regression results in Table 4 are generally consistent with this hypothesis. In line with Hypothesis 2a, college graduates consistently experience more advantageous changes in the task composition of their jobs relative to displaced workers without college degrees. College graduates experience roughly 0.3 SD larger increases in the abstract task intensity of their jobs and about 0.15 SD larger reductions in the routine and manual task intensity of their jobs. These advantages are relatively stable from 1990 onwards.

In support of Hypothesis 2b, compared to similar White displaced workers, Black displaced workers experience greater increases in the manual task intensity of their jobs in the 1980s, 1990s, and 2010s. On average, Black displaced workers experience a 0.1 to 0.16 SD greater increase in their job's manual task intensity. In the same decades, Black workers also experience smaller increases in the abstract task intensity of their jobs. There are fewer differences in patterns of task sorting between White workers and Hispanic and Other race workers. Hispanic displaced workers experience greater increases in routine task intensity in the 1980s and 2000s than White workers as well as smaller increases in abstract task intensity in the 1990s. These patterns are generally consistent with sorting into jobs with lower-paying task compositions. Other race displaced workers experienced disproportionately large increases in routine task intensity in the 1990s. Altogether, these results suggest that Black workers are strongly disadvantaged relative to White workers in task sorting after displacement while Hispanic and Other race workers are somewhat disadvantaged.

Compared to men, women consistently exhibit different patterns of task sorting after displacement. In line with Hypothesis 2c, in every decade from 1980 to 2019, women experience greater increases in abstract and routine task intensity and greater reductions in manual task intensity. Point estimates suggest that women's advantages in abstract and manual task sorting have diminished over time. Both patterns of task sorting are advantageous to women's earnings prospects after displacement. Women also sort into jobs that result in much larger increases in routine task intensity than men, which tends to be associated with greater earnings losses. Women's disproportionate gains in routine task intensity attenuate somewhat in more recent decades.

Accounting for selection into reemployment using a Heckman correction generally has little effect on estimates of between-group inequalities in task sorting. However, Heckman corrected estimates reveal significant differences in sorting on abstract task intensity in the 1980s between Black and White displaced workers and between displaced workers with and without college degrees. These dynamics generally suggest that in the 1980s, differences in abstract task sorting by race and education would be present had all displaced workers found new jobs.

#### *Between-Group Differences in Task Sorting and Earnings Inequalities*

Displaced workers experience different changes to the task composition of their jobs by race, gender, and level of education. Hypothesis 3 predicts that these differences in task sorting translate to between-group inequalities in the effect of displacement on earnings. Mediation analyses presented in Table 5 suggest that differences in task sorting explain a significant proportion of earnings inequalities from job displacement by race and education. The effect of task sorting on earnings inequalities is clearest when comparing earnings losses among college graduates and non-college-graduates. In each decade, changes to college graduates' earnings after displacement are about 15 percent smaller than for non-college-graduates. Task sorting explains 13 percent of this gap in the 1980s, 26 percent of the gap in the 1990s, and about 20 percent of the gap in the 2000s and 2010s. Differences in the abstract task composition of workers' new jobs explain just under one third of the total gap by education, while differences in routine and manual task ratings play a small suppressive role.

Differences between Black and White displaced workers in patterns of task sorting explain about 25 percent of racial inequality in proportional earnings changes in the 1980s and 1990s. In the 1980s, racial differences in the abstract task rating of workers' new jobs explain 15 percent of the gap and the other 10 percent is explained by routine tasks. However, in the 1990s,

Black-White inequality in earnings changes is almost entirely explained by differences in the abstract task rating of workers' new jobs. Task sorting explains much less Black-White inequality in earnings changes in the 2000s and 2010s. Task sorting explains a little over 10 percent of Hispanic-White inequality in earnings changes across decades, but the mediation is not statistically significant. Again, mediation operates almost entirely through racial differences in abstract task sorting. Very little of the male-female gap in earnings changes after displacement is explained by task sorting.

#### *Demand for Routine Labor and Inequalities in Task Sorting and Earnings*

Finally, I examine how changes in state-level demand for routine labor moderate inequalities in earnings and task sorting after displacement by race, gender, and education. Hypothesis 4 predicts that reductions in demand for routine labor will increase inequalities in post-displacement outcomes by race and education and reduce inequalities by gender.

Regression coefficients presented in Table 6 and predicted earnings and task changes in Figure 2 suggest that net of differences on observables, declining demand for routine labor exacerbates earnings inequalities after displacement by race and education. On average, a one percentage point reduction in the state-level routine share of employment amplifies the Black-White gap in proportional earnings changes by 1 percentage point ( $p < 0.10$ ) and the Other-race-White gap by 2 percentage points ( $p < 0.10$ ). The same decline in demand for routine labor increases the college gap in earnings losses by 1 percentage point, on average. After implementing a Heckman correction, the interactions between state-level demand for routine labor and indicators for Black and non-college-graduate are no longer significant, while the interaction effect remains significant for Other race.



Declining demand for routine labor is also associated with differences in task sorting by race. Compared to White workers, reduced demand for routine labor disproportionately reduces the abstract and routine task intensity of Hispanic workers' jobs and drives Hispanic workers into manual task intensive jobs. Reduced demand for routine labor also disproportionately drives Black workers into manual task intensive jobs. These patterns of racial inequality and task sorting persist after adjusting for selection into reemployment using a Heckman correction. There is no association between declining demand for labor and gender inequalities in post-displacement outcomes. Altogether, these results suggest that declining demand for routine labor amplifies inequalities by education and race among displaced workers in terms of earnings losses and task displacement.

## **Conclusions**

While sociologists have long been interested in inequalities stemming from differences in workers' career trajectories, typically characterized by mobility within firm- or occupation-internal labor markets or by rates of income growth, less work examines inequalities in the effect of disruptive events on workers' careers. Job displacement is a relatively common and highly disruptive event that has significant negative consequences for workers' short- and long-run career trajectories. Sociologists have paid relatively little attention to the costs of job displacement despite its serious consequences for workers short- and long-run economic and noneconomic wellbeing and its potential to severely disrupt workers' career trajectories and progression through firm- and occupation-internal labor markets. Sociological research on job displacement largely focuses on the noneconomic costs of job loss, but the field's theoretical and

empirical understanding of the dynamics underlying inequalities in the economic costs of job displacement remains underdeveloped.

This research offers several contributions towards that end. Empirically, this work advances our understanding of inequalities in the costs of job displacement and their underlying mechanisms. First, I have shown that earnings losses from job displacement are strongly associated with how workers' job tasks change between their lost job and their current job. This finding supports the notion that earnings losses depend on the degree of displacement – that is, how workers' new jobs differ from their old jobs – that workers experience. I further demonstrate that not all changes in jobs' task composition have similar consequences. While increases in the routine and manual task intensity of workers' jobs are associated with larger earnings losses, increases in abstract task intensity generally reduce earnings losses. Consistent with queueing theories of labor market inequalities, I have also shown that patterns of task re-sorting after job displacement differ substantially by race, gender, and education, explaining substantial proportions of inequalities in earnings losses by race and education. These queueing dynamics are also shaped by changes to the job structure. Declining demand for routine labor has further exacerbated inequalities by race and education in both task sorting and earnings losses after job displacement.

This work also advances sociological theory regarding the costs of job displacement. I have developed and tested a sociological framework that connects individual and structural features of the labor market to understand between-group inequalities in the costs of job displacement. I connect sociological models of labor market queueing (Hodge 1973; Thurow 1975; Weiss 1980; Reskin and Roos 1990) with economic approaches to task-based analyses of the labor market (Acemoglu and Autor 2011; Autor and Dorn 2013; Autor and Handel 2013;

Acemoglu and Restrepo 2022) to demonstrate how inequalities by individual-level traits such as race, gender, and education, are shaped by between-group differences in the degree of task displacement that workers experience. Through task-based analyses of displaced workers' job transitions, I have shown that task similarity is a strong predictor of how displaced workers' earnings will change between their lost and new jobs, that White and college-educated workers experience relatively favorable changes to their job's task composition while Black, Hispanic, and non-college-educated displaced workers tend to experience significant task downgrading after displacement, and that these differences in patterns of task-sorting help explain between-group differences in earnings losses after job displacement.

Moreover, by examining how queueing dynamics change with the decline of demand for routine labor, I have shown how major structural shifts in the United States labor market have amplified inequalities in the costs of displacement. Following Sørensen's (1975) call to connect individual-level analyses of social mobility to structural features of the labor market, this work demonstrates how inequalities in the costs of disruptive events such as job displacement depend not only on how employers value different demographic characteristics when hiring and setting wages, but also on how the job structure shapes the consequences of inequalities in how employers rank workers in the labor queue. As the demand for routine labor declined and the middle of the occupational distribution hollowed out, displaced workers ranked lower in the labor queue experienced even greater downward mobility into the bottom of the labor market because there were fewer vacancies in the middle. This finding contributes to the sociological and economic literatures on earnings inequalities between demographic groups due to automation and task displacement (e.g. DiPrete and Nonnemaker 1997; Acemoglu and Restrepo

2022), and extends these literatures to consider changes in the costs of disruptive events such as job displacement.

There are some limitations to this study that could be addressed in future research. First, data limitations in the DWS make it difficult to control for differences in workers' skills and productivity, limiting our ability to rule out alternative explanations for inequalities observed among displaced workers. We cannot observe respondents' work history and do not have measures of latent ability, which are better captured in some panel datasets. Still, because these analyses control for workers' earnings and job characteristics at their lost job, and because job displacement is often understood as an exogenous event (Madden 1987; Brand 2015), I argue that these analyses produce reasonable estimates of inequalities in the costs of job displacement. Future work may also be interested in investigating the longer-run consequences of task displacement and task sorting after job displacement. DWS data are limited to the first few years after workers are displaced. With long-run panel data, analysts could examine how the costs of displacement vary depending on workers' stock of accumulated investment in task-specific skills over their career before displacement, as well as whether and how quickly displaced workers are able to accumulate returns to new skill investments after displacement. Finally, while this study focuses on labor market structure defined by the demand for routine labor, other structural features of the labor market such as labor market concentration, unionization rates, or unemployment rates may also play an important role in shaping inequalities in the consequences of job displacement.

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