Unequally Unemployed:
Labor Market Stratification After the Great Recession

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Abstract

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The Great Recession of 2007-2009 was the most destabilizing recession since the Great Depression. After the mortgage securitization bubble burst in 2007, the Great Recession erased more than half of the stock market capitalization (Grusky et al., 2011). The financial collapse led to waves of job loss and unemployment. In March of 2007 the national unemployment rate was 4.4%. By October 2009, unemployment had increased almost six percentage points to 10.1%. The number of unemployed people in the United States more than doubled between 2008 and 2009.

Unemployment rates reached record highs after the onset of the recession, particularly among black men (a group that already had a heightened risk of unemployment prior to the recession). By March of 2010, nearly one in five black male labor force participants over the

age of 20 was unemployed. The black/white employment gap among women also increased, as well as the employment gap between the most educated and the least educated. White and foreign-born Hispanic men maintained relatively low unemployment rates, even during the recession.

Social scientists have a clear understanding of the patterns and sources of income inequality. This dissertation investigates patterns and sources of employment inequality. I focus on a unique historical period: the Great Recession and its aftermath. Compared to other recessionary periods, the labor market repercussions from the Great Recession were especially severe and long-lasting (Grusky et al., 2011). I examine how these repercussions vary by race, ethnicity, and gender.

Based on their socioeconomic characteristics, Mexican immigrant men should have very high unemployment. More than half do not have a high school diploma. One in four works in construction; at the height of the recent recession, 20% of construction workers were unemployed. Yet their unemployment rates are similar to those of native-born white men. Chapter 2 examines potential reasons for the Mexican immigrant employment paradox. I consider explanations based on theories about out-migrant and in-migrant selection, disparities in reservation wages, and employer preferences for immigrant labor.

Chapter 3 examines the extent to which the public sector protected black workers from the employment shocks of the Great Recession. Historically, the public sector has served as an equalizing institution through the expansion of job opportunities for minority workers. Using Current Population Survey cross-sectional and longitudinal data, I investigate changes in public sector employment and unemployment between 2003 and 2013. My results point to a post-recession double disadvantage for black public sector workers: they are concentrated in a shrinking sector of the economy, and they are substantially more likely than white and Hispanic public sector workers to be unemployed. These two trends are a historical

break for the public sector labor market. I find that race and ethnicity gaps in public sector employment cannot be explained by differences in education, occupation, or any of the other measurable factors that are typically associated with employment. Among unemployed public sector workers, black women are the least likely to transition into private sector employment. Compared to the private sector, however, the post-recession public sector has had consistently lower levels of racial and ethnic employment stratification.

Chapter 4 investigates whether and how labor market context affects racial and ethnic employment disparities. I find that black men are more likely to be employed when they reside in areas with 1) a large concentration of public sector jobs, or 2) relatively lax employment, labor, and hiring regulations. I conclude that while black men are more likely to be working when employers have fewer impediments to hiring and firing, black men also benefit from access to highly regulated public sector employment opportunities.

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The elders of my dissertation village are brilliant and generous (a rare find in academia). Jake Rosenfeld taught me almost everything I learned in graduate school, including how to write. I doubt that I will ever be able to craft a narrative as compelling as a Rosenfeld front end, but I am glad to now have many Rosenfeld examples to draw from. Now, whenever I am up against what seems like an insurmountable research problem, I ask myself, what would Jake do? Then the answer becomes clear.

As co-chairs of my committee, Jake and Stew Tolnay have both guided me through many rounds of peer review. Jake's reviewer memos are the gold standard. I can always rely on Stew's recommendations for dealing with challenging reviewer comments (i.e., "throw them a bone, Jenn"). Stew's attention to detail is unparalleled. I will be forever grateful to Stew for the opportunity to co-author as a clueless first-year student.

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A version of Chapter 2 was published in *Social Science Research*. A version of Chapter 3 has completed two rounds of peer review at *Demography*. Both chapters are much improved because of thoughtful comments from editors and reviewers.

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Chapter 1

INTRODUCTION: EMPLOYMENT INEQUALITY AND THE GREAT RECESSION

The Great Recession of 2007-2009 was, according to most indicators, the most destabilizing recession since the Great Depression.[1] In March of 2007 the national unemployment rate was 4.4%. By October 2009, unemployment had increased almost six percentage points to 10.1%. The magnitude of the increase in unemployment (5.7 percentage points) is substantially larger than prior recessions (Hout et al., 2011). The number of unemployed increased at an alarming rate, and they stayed unemployed for an exceptionally long time. In January 2010, the average length of unemployment was 21 weeks compared just nine weeks during the recessions between 1977 and 2001 (Hout et al., 2011).

Some groups were affected more than others. Between 2007 and 2010, the employment rate for black men decreased more than nine percentage points (Figure 1.1).[2] During the same time period, the employment rate for white men decreased only six percentage points; the white employment premium over blacks grew from 15.8 percentage points to 18.4 percentage points. Foreign-born Mexican men experienced an especially steep decline in employment after 2006. Despite the decline, their employment rates have been consistently higher than native-born men.

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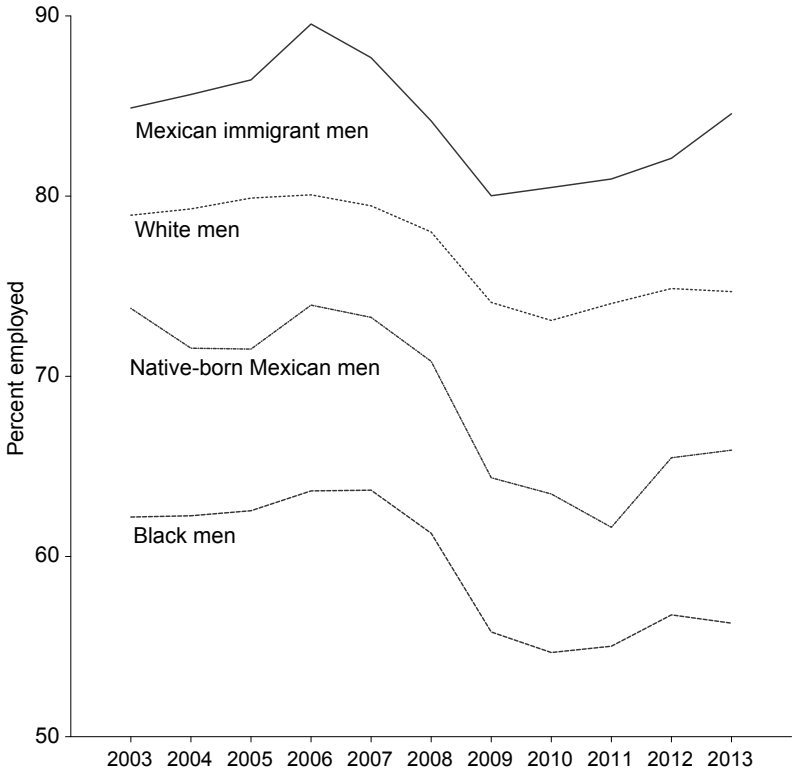
[1] According to the Bureau of Labor Statistics, the recession began in December 2007 and ended in June of 2009. The sharp increase in the unemployment rate began in 2008. The unemployment rate did not reach its peak until October of 2009, four months after the recession officially ended. At the end of 2011, the unemployment rate (8.5%) was 3.5 percentage points higher than December 2009 when the recession began.

[2] I use the **tile** package in `R` to produce the figures in this dissertation (Adolph, 2012).

Figure 1.1. Employment to population ratios for men, 2003 - 2013.



Note: Sample restricted to individuals between the ages of 16 and 64.
Source: Data come from the CPS MORG files.

What accounts for the growth in the black-white unemployment gap during the Great Recession? And why are employment rates for foreign-born Mexican men so high? These are the motivating questions for this dissertation.

In addition to explaining the sources and patterns of employment stratification, this dissertation also advances the literature on the social and economic consequences of the Great Recession. Why is the Great Recession sociologically relevant? Because the Great Recession was an especially extreme recession, and inequality tends to increase during times of economic recession. In their study of income data going back to the 1960s, Smeeding et al. (2011) find that income inequality – as measured by both quintile share ratios and the Gini coefficient – rises during recessions. More generally, the losses incurred during a recession

are inherently unequal. With limited wealth accumulated, those at the bottom of the income distribution are more likely to fall into poverty as the result of unemployment.

There is a dearth of empirical research on employment inequality. In their descriptive review of inequality and the Great Recession, Grusky et al. (2011) recognize the unequal distribution of unemployment, but they understate the full extent of racial and ethnic disparities in unemployment after 2007. They argue that many historically disadvantaged groups were relatively unaffected by the Great Recession. Job loss in the lower-paid service industries during the Great Recession was relatively low, for example (Hout et al., 2011). Grusky et al. acknowledge that unemployment increases among the least educated were large, but they also claim that for many groups, increases in unemployment were roughly proportionate to the base rate.

Unemployment has increased at a similar rate for blacks and whites, but employment inequality has not remained stable. An example using CPS data helps to illustrate the distinction. Between 2008 and 2009, the unemployment rate for black men increased from 7.8% to 13.2%. During the same time period, the unemployment rate for white men increased from 4.1% to 7.7%. The unemployment rate for white men increased by a factor of 1.9 compared to a factor of 1.7 for black men. Yet, the black/white gap employment gap increased considerably (see Figure 1.1). Within the private sector, the black/white gap in employment was even more pronounced. The increase in the risk of being jobless during the Great Recession was much greater for black men than it was for men from other groups. Similarly, the black/white employment gap among women increased, as well as the employment gap between the most educated and the least educated.

After controlling for human capital and demographic factors typically associated with employment – including education, occupation, and age – I uncover three distinct employment patterns from the past decade:

- Remarkably low unemployment among Mexican immigrant men
- Declining black employment in the public sector, a labor market niche that has historically been a major source of professional jobs for black workers
- Large effects of labor market regulatory context on black employment

The Mexican Immigrant Employment Paradox

On any given day more than 100,000 day laborers congregate on street corners in search of work (Bureau of Labor Statistics, 2001; Valenzuela et al., 2006). The typical job offer is for a period of two to three days (Valenzuela, 2003, p. 323). Very few day laborers are able to obtain consistent work, and as a result, most experience repeated spells of temporary unemployment. In his review of day labor research, Valenzuela (2003, p. 319) notes that "many workers often wait several hours before securing work for the day, and despite their dutiful gathering each morning, day laborers often experience bouts of unemployment that last several days, and periods of unemployment lasting several weeks are not uncommon." The majority of day laborers are Mexican immigrant men (Escobar, 2006; U.S. General Accounting Office, 2002).

Based on their socioeconomic characteristics and their labor market position, Mexican immigrant men should have very high unemployment. In addition to the language and legal challenges that accompany the migration experience, Mexican immigrant men have relatively low levels of education (most do not have a high school diploma), and they are overrepresented in construction occupations that experience frequent surges in unemployment.

And yet, the employment advantage that Mexican immigrant men have over native-born men is large and it has grown over time (Figure 1.1). Despite their lack of education, foreign-born Mexican men only reached a recession peak unemployment rate of 11.4%, a rate that is closer to the peak of 9.8% for white men than the peak of 14% for native Hispanic men.

Chapter 2 examines potential reasons for the Mexican immigrant employment paradox. I take advantage of the extensive amount of employment information provided in the Current Population Survey (CPS), as well as the information the CPS gathers from immigrants (country of origin, age at arrival, citizenship), to test whether the employment patterns are consistent with notions of differential access to unemployment benefits, selection for employment, as well as employer preferences for immigrant workers.

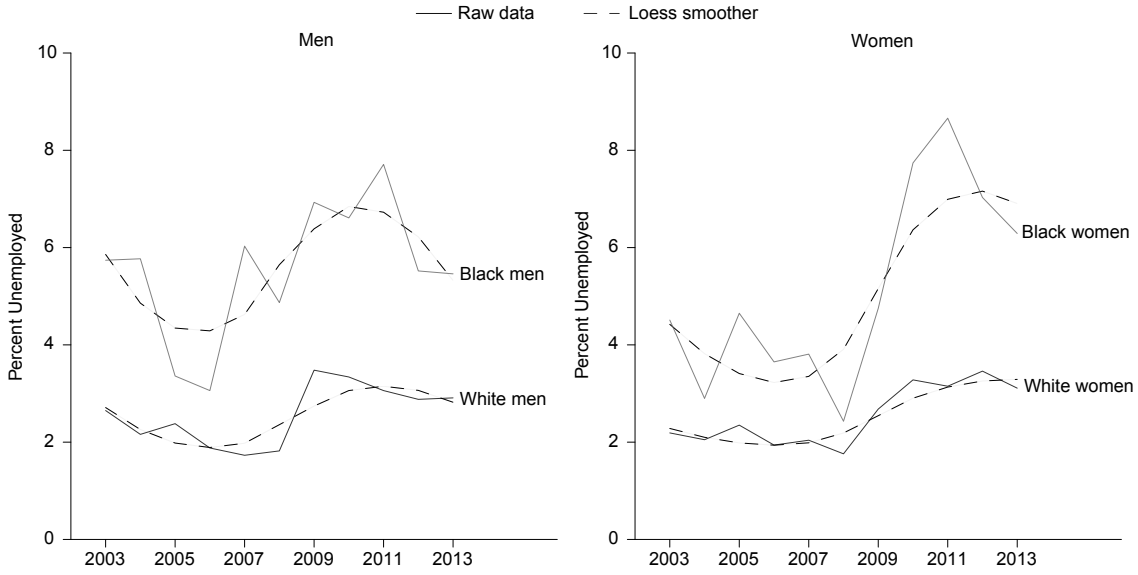
Black Employment and the Decline of the Public Sector

Compared to the private sector, the public sector has provided black workers with better pay and more professional and managerial opportunities (Hout, 1984; Carrington et al., 1996; Pitts, 2011; Smith, 1977). Black-white income inequality is significantly lower in the public sector. Using data from the 1990 Census, Grodsky and Pager (2001) find that after controlling for human capital and demographic factors associated with earnings, the black earnings disadvantage is 6.5 percentage points lower in the public sector than in the private sector.

Data from the most recent economic recession, however, points to growing racial inequality in the public sector. Figure 1.2 below shows the black/white unemployment gap among public sector workers before, during, and after the Great Recession.

Black women appear to be among the workers most affected by public sector layoffs. After the onset of the recent recession, the race gap in female public sector unemployment rates increased dramatically from less than a percentage point in 2008 to a peak of 5.7 percentage points in 2011. Compared to their male counterparts, both black and white women in the public sector experienced a steeper rise in post-recession unemployment. As a recent *New York Times* article notes, public sector job losses "have blunted gains made in employment and wealth during the previous decade and undermined the stability of neighborhoods where there are now fewer black professionals who own homes or who get up every morning to go to work." (Williams, 2011).

Figure 1.2: Public sector unemployment, 2003 - 2013.



Source: Data come from the CPS-MORG files.
Note: Sample restricted to individuals in the labor force between 16 and 64 in their fourth interview.

Chapter 3 considers three potential explanations for the trends in Figure 1.2. First, I test whether public sector employment inequality reflects compositional differences in education and occupation. Second, I test the hypothesis that privatization reforms have led to the convergence of public and private sector employment patterns. Finally, I examine whether public sector whites, once unemployed, are more likely to find private sector employment.

Labor Market Context

Chapter 4 investigates the disparate effects of labor market context. Aside from the obvious advantage of living in a city with job growth, workers have more job security when they have access to jobs that are protected – either by unions or by government regulations. Highly regulated public sector jobs have, historically, provided more job stability and more opportunities for long-term upward mobility, especially for black workers (Blank, 1985; Hol-

lister, 2011). And yet, it may be that employers are more likely to hire minority workers when there are fewer barriers to hire and fire. If this is the case, then black / white employment disparities should be lower in areas with fewer regulations.

The employment advantage that native-born whites have over other native-born workers is large, particularly during the recent recession. In each of the three empirical chapters (Chapters 2 - 4), I first consider whether race and ethnic employment disparities are the result of compositional differences. (For example, it may be that black workers in the public sector are concentrated in the type of public sector jobs that are the most likely to be eliminated during an economic recession.) I demonstrate that differences in labor market position cannot fully account for the low rates of unemployment among Hispanic immigrants (Chapter 2) or the surge in unemployment among black women in the public sector (Chapter 3). I then look to insights from theories about labor market context (Chapter 4). I find that while black men are more likely to be working when it is easier for employers to hire and fire, black men also benefit from access to highly regulated public sector employment opportunities.

Chapter 2

THE MEXICAN IMMIGRANT EMPLOYMENT PARADOX

Abstract

Based on their socioeconomic characteristics, Mexican immigrant men should have very high unemployment. More than half do not have a high school diploma. One in four works in construction; at the height of the recent recession, 20% of construction workers were unemployed. Yet their unemployment rates are similar to those of native-born white men. After controlling for education and occupation, Mexican immigrant men have lower probabilities of unemployment than native-born white men – both before and during the recent recession. I consider explanations based on eligibility for unemployment benefits, out-migrant selection for unemployment, and employer preferences for Mexican immigrant labor.

Introduction

Based on their socioeconomic characteristics, Mexican immigrant men should have very high unemployment. In addition to the language and legal challenges that accompany the migration experience, Mexican immigrant men have, on average, low levels of education. According to the Current Population Survey (CPS), 60% of Mexican immigrant men do not have a high school diploma. In contrast, high school dropouts make up just 28% of native-born Mexican men, 13% of native-born black men, and less than 10% of native-born white

men. Education matters because it is negatively associated with both the incidence and the duration of unemployment (Farber, 2004; Mincer, 1991). Education provides qualifications for employment, and it protects against job loss. During the most recent recession, 78% of the job losses were experienced by workers with a high school diploma or less, a group that constitutes less than half of the total workforce (Carnevale et al., 2012). Less than 5% of male workers in the U.S. are Mexican immigrants, yet they represent over 15% of male high school drop-outs in the U.S.[1]

There is at least one additional reason why Mexican immigrant men should have high unemployment: they are over-represented in construction, an industry that has frequent surges in unemployment. One in four Mexican immigrant men in the CPS works in construction, compared to 11% of native-born Mexican men, 12% of native-born white men, and 8% of native-born black men. During the Great Recession, construction workers were hit particularly hard. According to the CPS, nearly one-fifth of male construction workers were unemployed in 2009.[2]

And yet, Mexican immigrant men have *lower* unemployment rates than both native-born Mexican and native-born black men (see Figure 2.1).

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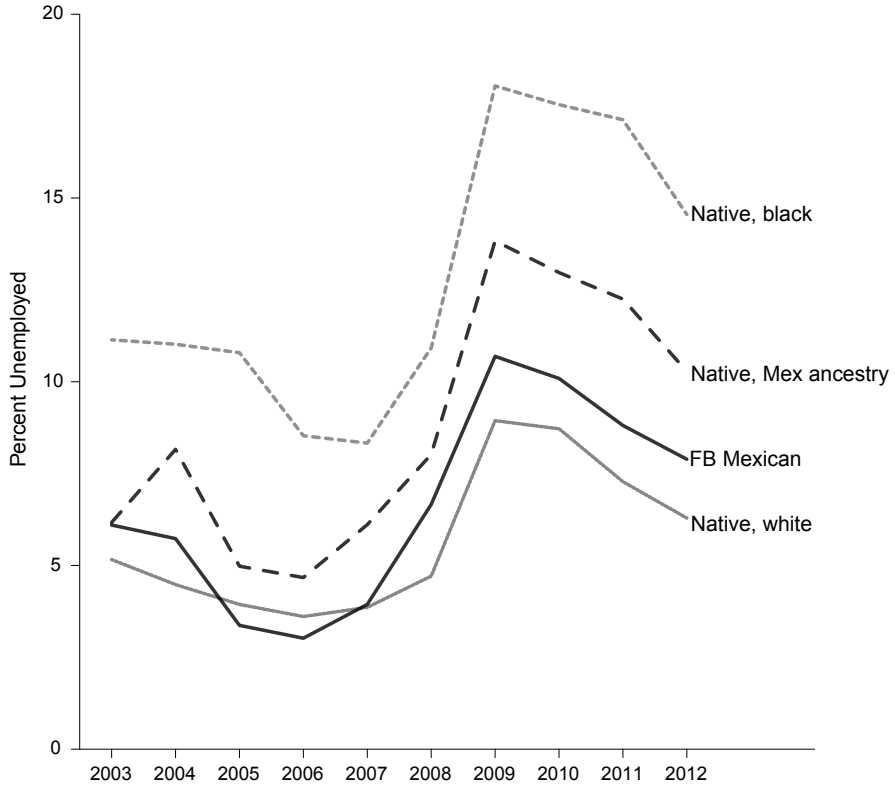
[1]I exclude women from this analysis for two reasons. First, the pathways into and out of employment vary by sex. Second, female employment is far more selective in Latin American countries than in the U.S. (Parrado and Flippen, 2005). Compared to native-born women, a much larger share of foreign-born Mexican women do not have any work experience (Tienda and Stier, 1996). Ethnographic research suggests that among Mexican immigrants in the U.S., female employment is often viewed as a temporary necessity for families in which the men have insufficient income (Parrado and Flippen, 2005).

[2]Why focus on Mexican men as opposed to other immigrant groups? Based on their education and their occupational distribution, Mexican immigrants should have higher unemployment rates than other immigrant men. Compared to non-Mexican Hispanic and non-Hispanic immigrants, Mexican immigrant men have much lower levels of education (greater percentage of high school dropouts), and they are more heavily concentrated in the construction industry.

Figure 2.1: Male unemployment rates by race and ethnicity, 2003 - 2012.



Source: Data come from the CPS-MORG files.
Note: Sample restricted to male workers in the labor force between the ages of 18 and 64 in their fourth interview.

Despite their lack of education, foreign-born Mexican men reached a recession peak unemployment rate of only 10.7%, a rate that is closer to the peak of 8.9% for native white men than the peak of 13.8% for native Mexican men. During the pre-recession period between 2005 and 2007, foreign-born Mexican men had *lower* unemployment than white men. Duncan et al. (2006) and Duncan and Trejo (2012) have noted that immigrant men with low levels of education have higher employment rates than similarly-educated native-born men. While Duncan et al. focus on employment (not unemployment), high employment and low unemployment together suggest that Mexican immigrant men have more favorable employment outcomes than their education would predict. What prior research has not yet empirically addressed are the reasons *why* so few Mexican immigrant men are unemployed. Given their

lack of education and the disproportionate effects of recessions – especially the Great Recession – on the least educated (Elsby et al., 2011; Hoynes et al., 2012), Mexican immigrant men should have had exceptionally high unemployment during the Great Recession.

This is the most comprehensive analysis to date of potential explanations for the low unemployment rates among Mexican immigrant men. This is also the first investigation of the unemployment gap between native-born and Mexican immigrant men during the Great Recession, a recession that took unemployment to unprecedented heights (Hout et al., 2011). Consistent with prior economic research, I consider factors associated with employment, unemployment, and not being in the labor force. I take advantage of the extensive amount of employment information provided in the CPS to examine whether the data are consistent with theories about out-migrant selection for unemployment, disparities in reservation wages based on access to unemployment benefits, or employer preferences for non-citizen Mexican immigrant workers (most of whom are unauthorized to work in the United States). Prior research on disparities in male unemployment largely focuses on the concentration of unemployment among black men (Sampson, 1987; Wilson, 1987, 1996) and employer preferences for Hispanic immigrant men over native-born black men (Waldinger and Lichter, 2003). While low unemployment among immigrant men may seem inconsistent with sociological research on the ubiquity of joblessness among Mexican day laborers (Valenzuela, 2003), day laborers are a relatively small proportion of the foreign-born Mexican population, and their employment status is highly visible to the public.

Theoretical background

Theories based on differences in reservation wages and eligibility for social insurance

Workers make employment decisions based on their labor market value and the costs

associated with job-seeking (Lippman and McCall, 1976). Government transfers such as unemployment insurance may incentivize workers to accept unemployment by reducing the cost of not working (Feldstein, 1978). Gritz and MaCurdy [1997] find that those who take up unemployment insurance (UI) benefits have longer spells without employment than unemployed workers who do not receive benefits. While UI benefit eligibility rules vary by state, in general, UI benefits are only available to those who have worked over a specified period and at a minimum wage level for employers subject to U.S. unemployment compensation law.[3] Even though they contribute to unemployment insurance through payroll taxes, unauthorized immigrants are not eligible for UI benefits. Migration scholars estimate that more than half of the Mexican immigrant population in the U.S. is unauthorized (Camarota, 2012; Hanson, 2006).

Immigrants from Mexico tend to have a low reservation wage (the minimum wage at which work will be accepted), in part because immigrants operate with a dual frame of reference, judging conditions in the receiving country relative to expectations in the sending country (Waldinger and Lichter, 2003). By increasing the cost of not working, exclusion from UI benefits may further reduce the reservation wage for Mexican immigrants. As a result, Mexican immigrants may be more likely than natives to seek out or accept part-time employment in lieu of being unemployed.

In this dissertation, I refer to involuntary part-time employment as *underemployment*. The Bureau of Labor Statistics defines the underemployed as those who want and are available for full-time work but can only find part-time employment for economic reasons, such as slack demand for work or poor business conditions (Sum and Khatiwada, 2010).The deleterious effects of underemployment have received wide-spread media attention. Employers' growing dependency on part-time labor has created a situation where there are now grocery store clerks who are not permitted to work more than 30 hours per week even after five

[3]Legal permanent residents are eligible. Foreign employment is not covered by UI.

years at the same store (Greenhouse, 2012) and full-time commercial drivers who are now restricted to a 30-hour work month (Cooper, 2012). Underemployment doubled during the second year of the recession, reaching roughly 6.5% in 2009 (Young, 2012). Lin [2011] finds that Mexican immigrant men – especially non-citizens – work fewer hours per week than non-Hispanic white workers, even after controlling for education, economic sector, union membership, and hourly versus salaried employment. What is not clear from prior research is whether Mexican immigrant men are *voluntarily* working fewer hours per week.

Demographic theories of migrant selection

Migration is inherently selective. The relatively low unemployment rates among Mexican immigrant men may indicate that they are self-selecting based on their capacity to find and maintain employment. Duncan and Trejo(2012) propose an employment model of migrant selectivity that takes into account immigrant-native employment differences by education level. Among workers with little education, Duncan and Trejo theorize that immigrants will have high employment relative to natives because less-skilled individuals who are unlikely to find work are better off staying in their home country and avoiding the costs of migration. In their study using data from the Mexican Migration Project, Cerrutti and Massey (2001) report that the most common reason for Mexican men to initiate migration to the U.S. is to find work. In Mexican communities where migration is common, there are strong expectations within families that teenage men should migrate to the U.S. to find work (Kandel and Massey, 2002).

There is a second selection mechanism that could be contributing to the low unemployment rates among Mexican immigrant men: out-migrant selection for unemployment. Prior research suggests that exposure to unemployment in the U.S. will increase the probability that a migrant will return home (Reyes, 2004; Van Hook and Zhang, 2011). Unauthorized im-

migrants may return to their native country because they are not eligible for unemployment benefits. Recent immigrants may be likely to return home after a period of unemployment because they tend to have smaller kinship networks than those who have been living in the U.S. for an extended period of time (Massey et al., 2003). There are also reasons to expect marital status to affect the propensity to selective out-migrate. Contrary to the household specialization model – which assumes that married men will focus more on work because they tend to carry the responsibility for generating income within a household (Becker, 1973, 2081) – married immigrant men with spouses in the U.S. may have higher unemployment than other immigrant men because they face greater costs of returning home.

Even when jobs are scarce, the reasons to stay may outweigh the reasons to leave. In their recent examination of attrition from the 1996 - 2009 CPS files, Van Hook and Zheng [2011] find that while unemployment is generally associated with out-migration for foreign-born adults in the CPS, being unemployed is not a predictor of out-migration for Mexican men between the ages of 18 and 64. Studies of pre-recession migration patterns using data from the Mexican Migration Project (MMP) find no association between unemployment in the U.S. and out-migration for Mexicans with authorization to work in the U.S. (Reyes, 2004). If Mexican immigrant men tend to return to their native country when the chances of getting a job are slim, then the return migration of Mexican men should increase during economic downturns. Yet the return migration of adult Mexican men declined during the Great Recession (Rendall et al., 2011; Van Hook and Zhang, 2011). Given the escalation of border patrol efforts since the 1980s, immigrants may choose to weather economic conditions in the U.S. rather than risk not being able to get back into the country (Hout et al., 2011; Massey, 2005; Massey et al., 2003).

Employer preferences for an immigrant workforce

In contrast with job search theories of workers as utility maximizers, the employer-based perspective focuses on firms as labor market creators. According to Osterman (1988) and Tilly (1996), firms create labor markets based on three objectives: cost minimization, flexibility, and predictability. The relative importance of these objectives is determined by the market for a firm's product. When there is intense competition over prices, firms will pursue strategies that keep wages low. When demand is volatile, firms will seek to create a flexible workforce than can easily be laid-off and re-hired. Firms expecting steady growth in demand will focus on predictability, long-term hiring, and reducing turnover.

For example, during the reconstruction period following Hurricane Katrina in 2005, construction employers in New Orleans created entirely new low-cost, temporary labor markets. There are several reasons why post-Katrina employers recruited temporary migrant workers. First, firms that employ migrant workers can gain a competitive advantage because migrants have lower reservation wages. Brown et al. (2012) find that employing unauthorized workers increases a firm's survival rate by 19%. Second, unauthorized migrant workers have no legal standing should they desire to protest work conditions. Employers can blame foreign recruiters for broken promises about work conditions or pay (Donato et al., 2007). Third, migrant workers are more likely than native workers to accept undesirable or hazardous work, such as asbestos and mold removal (Donato and Bankston, 2008; Hernandez-Leon, 2008). Even if employers do not have explicit plans for recruiting temporary or unauthorized workers, there is evidence to suggest that employers discriminate against natives for low-skill jobs. In their study of Latino immigrants in Los Angeles, Waldinger and Lichter (2003) describe a tendency among employers to associate foreign-born Hispanics with desirable worker qualities, such as subordination and productivity. Waldinger's (1997, p. 383) interviews with employers highlight the rationale behind managers' preferences for immigrant labor: "Yes, the immigrants just want to work, work long hours, just want to do anything. They spend a lot of money coming up from Mexico. They want as many hours as possible. If I called them in for 4 hours to clean latrines, they'd do it. They like to work."

To the extent that employer preferences depend on the business cycle, immigrant / native disparities in unemployment should vary over time. Employer preferences for temporary workers should change during a recession given that a recession affects the relative importance of cost minimization, flexibility, and predictability. Employers that experience falling demand during a recession may seek out immigrant labor as a way of reducing labor costs. If demand is not necessarily declining but more volatile as the result of a recession, then employers may try to make their labor force more flexible by hiring migrant workers. Indeed, the recent recession triggered an unprecedented increase in the number of guest workers from 1.7 million in 2009 to 2.8 million in 2010 (Massey, 2012).

This analysis is the first to explore potential reasons for the low unemployment rates among Mexican immigrant men. I consider explanations based on out-migrant selection for unemployment, differences in reservation wages based on access to unemployment benefits, and employer preferences for an immigrant workforce. First, if Mexican immigrants have low unemployment rates because they are more likely than natives to accept part-time work, then Mexican immigrants should have disproportionately high probabilities of underemployment (involuntary part-time employment) relative to their probability of unemployment. Second, I examine whether the data are consistent with the selective out-migration hypothesis by disaggregating married migrants based on whether or not they live with their spouses. If unemployed Mexican immigrant men have a tendency to return to Mexico, then those immigrants with spouses in the U.S. should have significantly higher unemployment because they face greater relocation costs. Finally, if Mexican immigrant unemployment rates reflect employer preferences for immigrant workers with little bargaining capacity, then non-citizen Mexican immigrants (most of whom are undocumented according to data from the Mexican Migration Project) should have the lowest probabilities of unemployment.[4] If employers have greater incentives to prefer immigrants increase during periods of economic uncertainty, then

[4]According to data from the MMP, approximately two-thirds of non-citizen immigrants from Mexico between 2003 and 2011 were undocumented (see mmp.opr.princeton.edu). The Current Population Survey does not ask immigrants about their legal status.

the immigrant / native unemployment gap should have increased during the recent recession.

Unfortunately, given the data available in the CPS, I cannot rule out all of the alternative explanations associated with each of my hypotheses. Low unemployment among non-citizens does not necessarily mean that employer preferences are the primary determinant of immigrant / native unemployment disparities. Non-citizen Mexican immigrants may have lower reservation wages, or, they may be more likely to out-migrate when faced with unemployment. Still, if there is no variation in unemployment based on citizenship, then employer bias in favor of immigrant workers with little bargaining power is an unlikely explanations for the immigrant / native gap in unemployment.

Hypotheses

The optimal dataset for testing theories based on selection, reservation wages, and employer preferences would include responses from employers, as well as measures of worker employability, authorization status, and job-seeking behavior among natives and immigrants across countries and over time. Given that such a dataset does not exist, I test hypotheses based on measures that are available in the CPS.

H1. Mexican immigrant men will be more likely to be underemployed (working part-time involuntarily) than native-born workers.

It may be that foreign-born Mexican men have low unemployment because ineligibility for unemployment benefits increases their likelihood of seeking out or accepting part-time employment in lieu of being unemployed.

H2. Contrary to the household specialization model, married Mexican men living with their spouses will have higher unemployment probabilities than single immigrant men and those not living with their spouses.

In general, being married reduces the odds of unemployment for men (Gorman, 1999; Lancaster and Nickell, 1980). According to the household specialization model, married men will focus more on work than single men because married men tend to carry the responsibility for income earning within a household (Becker, 1973, 2081). There is also research that suggests employers prefer married men over single men (Antonovics and Town, 2004; Korenman and Neumark, 1991). However, if Mexican immigrant men have a tendency to return to Mexico when faced with the prospect of unemployment, then Mexican immigrant men living with their spouses should have *higher* unemployment than other Mexican immigrant men because the costs of moving back to Mexico are greater for men with spouses in the U.S.

H3. The Great Recession exacerbated the gap in unemployment between non-citizen immigrant and native-born men.

While there are no direct measures of employer preferences in the CPS, I can examine whether Hypothesis 3 is consistent with variation in the probability of unemployment over time. Given that the relative cost of labor should matter more to employers during periods of economic uncertainty, then the immigrant / native unemployment gap should have increased during the recent recession.

Data and Methods

I test my hypotheses using data from the Current Population Survey (CPS), the source of the official U.S. monthly unemployment rate. The CPS is a monthly survey of approximately 60,000 households conducted by the Census Bureau for the Bureau of Labor Statistics (BLS). I used the merged outgoing rotation group (MORG) files of the CPS instead of the CPS Annual March Demographic survey for three reasons: the MORG samples are larger, the March samples may be subject to seasonal or recall bias because they are administered once a year rather than monthly (Akerlof and Yellen, 1985; Horvath, 1982; Morgenstern and Barrett, 1974), and the MORG supplement is better suited for research on underemployment. Unlike the March survey, the MORG supplement includes a detailed question for part-time workers about their reasons for working part-time instead of full-time.

I use the 2003 - 2012 MORG files. This time period allows me to compare employment patterns before, during, and after the Great Recession. I do not include years prior to 2003 because of substantial changes to the occupation scheme in the CPS data. While the CPS is a monthly survey, new households are not interviewed each month. Households that enter the CPS are typically interviewed for four months, then ignored for eight months, then interviewed again for four more months. Households in months four and eight are considered the "outgoing rotation groups" because they are about to leave the observation sample (temporarily or permanently). To avoid observing respondents twice in one sample, I restrict my sample to respondents in their fourth interview. I further restrict this analysis to men between the ages of 16 and 64.

I use the BLS definition of unemployment: not currently working, have actively looked for work in the prior four weeks, and currently available for work.[5] Those who are not working, available for work, have looked for a job during the past year but not during the past four weeks are considered by the BLS to be discouraged workers. My findings are not affected by whether I consider discouraged workers to be unemployed or not in the labor

[5]BLS employment definitions are available at `http://www.bls.gov/cps/lfcharacteristics.htm` .

force. In the Results section, discouraged workers are considered to be not in the labor force. In Appendix B, I include results from models where discouraged workers are considered to be unemployed. In the CPS, discouraged workers represent just 2% of men ages 16-64 who are not in the labor force. Of those considered by the BLS to not be in the labor force, only 5.7% have looked for work in the last four weeks. Of that 5.7%, most report that they are either not available to work or that they do not want to work.

Similar to prior research on underemployment (Slack and Jensen, 2007), I use the BLS definition of an underemployed worker: an individual who is working part-time (less than 35 hours per week) who wants a full-time job and is available for full-time work, but can only find part-time work for economic reasons. This definition of underemployment excludes individuals who work part-time for other reasons, such as seasonal work or childcare responsibilities. The BLS classifies these individuals as voluntary part-time workers.

In all models I control for education, age, age squared, marital status, parental status, occupation (current or most recent occupation if unemployed or out of the labor force), and citizen status.[6] Unemployment is concentrated among younger, less-educated workers. While the mechanisms linking family composition and unemployment are complex, the effect of marital status is clear from prior studies: compared to single men, married men have a much lower risk of unemployment. Given the research on employers' preference for fathers (Correll et al., 2007), I expect fathers to have a lower risk of unemployment than childless men. Since

[6]While the intent of this analysis is to analyze Mexican immigrant unemployment after taking their concentration in construction into account, there may be reasons to not include occupation as a control variable in a model that predicts the odds of working. For example, 86% of the male workers in the CPS who are not in the labor force do not report an occupation. In the models that follow, I drop all respondents who are missing on occupation (97% of whom are not in the labor force). Appendix C shows model results without occupation as a control (the sample in Appendix C is larger because it includes individuals missing on occupation). Excluding occupation from the analysis does not affect the major findings of this dissertation. When occupation is not taken into account, immigrant / native disparities in unemployment decrease slightly and Mexican immigrant men have a higher likelihood of being underemployed. These patterns are to be expected given the concentration of Mexican immigrant workers in construction occupations that have high rates of unemployment and in food preparation and cleaning occupations that have high rates of underemployment.

most citizens are eligible for UI benefits, I expect citizens to have higher unemployment than non-citizens.

I use the 21-category CPS "two-digit" detail occupation recode based on the 2000 Census occupation codes.[7] I use this occupation scheme because it identifies occupation groups that were disproportionately affected by the recent recession (e.g., construction). The more detailed Census 2000 occupation scheme, with more than 500 categories, would yield cell counts that are too small to quantify the effect of occupation on Hispanic immigrant employment patterns.

My race/ethnicity categories are: Mexico-born immigrant, other foreign-born Hispanic, native-born Mexican, native-born non-Mexican Hispanic, non-Hispanic white, non-Hispanic black, and other race or ethnicity. In all models, non-Hispanic immigrants are classified in the "other" race / ethnic category. I test my hypotheses about differential access to unemployment benefits by disaggregating Mexican immigrants based on citizenship. Those who were born abroad to American parents are designated as natives in my sample. All of the citizen immigrants in my sample became citizens through naturalization.

The dependent variable used to test Hypotheses 2 and 3 consists of three employment outcomes: not in the labor force, unemployed, and employed. The dependent variable used to test the underemployment hypothesis (H1) consists of five outcomes: not in the labor force, unemployed, involuntary part-time (underemployed), voluntary part-time, and full-time. Because my dependent variables consists of multiple unordered nominal categories, I estimate the outcome probability for individual i using a multinomial logit model:

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[7]The 21 two-digit occupation categories are: business and financial operations; computer and mathematical science; architecture and engineering; life, physical, and social science occupations; legal occupations; education, training, and library occupations; arts, design, entertainment, sports, and media occupations; healthcare practitioner and technical occupations; healthcare support occupations; protective service occupations; food prep and serving occupations; building and grounds cleaning and maintenance; personal care and service; sales; office and administrative support; farming, fishing, and forestry; construction and extraction; installation, maintenance, and repair; production; transportation and material moving.

$$\ln \frac{\Pr(y = m|\mathbf{X}_i)}{\Pr(y = n|\mathbf{X}_i)} = \mathbf{X}_i(\beta_m - \beta_n)$$

where $\mathbf{X}_i$ is the matrix of explanatory variables and the β coefficients correspond to outcomes m and n.[8]

I use three different model specifications to test my hypotheses. First, I test whether foreign-born Mexican men have low unemployment because they are more likely to seek out or accept part-time employment by examining immigrant / native variation in involuntary part-time employment (underemployment). Second, if immigrant / native unemployment disparities reflect a tendency for Mexican immigrants to leave the country when faced with unemployment, then those who are living with their spouses should have higher unemployment than those who are single or not living with their spouses. Finally, I test whether immigrant / native employment gaps changed during the recent recession by comparing results from the pre-recession years of 2004 - 2006 to the recession years of 2008-2010.

Given the number of coefficients generated by multinomial logit models, I limit the presentation in the Results section to the coefficients and predicted probabilities associated with the outcomes of interest: unemployment and underemployment (versus full-time). All models include state, metro/non-metro as well as month and year fixed effects to control for observed and unobserved geographic and temporal factors that give rise to differential rates of employment. Sample sizes and descriptives of the key covariates are presented in Table

[8]The independence of irrelevant alternatives assumption of multinomial logit requires that an individual's probability of being in one outcome category relative to another outcome category should not change if a third (irrelevant) category is added to or dropped from the analysis (for example, there's a chance that an individual's probability of voting for a Democrat versus a Republican will change if a third-party candidate is added to the ballot). Thus, my choice of a multinomial logit model depends on the assumption that adding employment categories to the set of possible employment outcomes will not change the relative probabilities. For example, the multinomial logit model assumes that an individual's probability of being unemployed versus underemployed (the ratio of two probabilities) is unaffected by whether I include "not in the labor force" as a possible outcome. In Appendix B, I present similar results from logistic regression models that are not constrained by the IIA assumption.

2.1.

Table 2.1 shows the distribution of unemployment and underemployment across racial and ethnic groups. Mexicans and non-Mexican Hispanics born in the U.S. have high unemployment relative to Mexican immigrants and non-Hispanic whites. Non-Mexican Hispanic immigrants have unemployment rates that are closer to the native-born Hispanic population than the Mexican immigrant population. Mexican immigrants have the lowest percentage (1.7%) of working-age adults not in the labor force. The racial and ethnic distribution of unemployment is not affected by whether I consider discouraged workers to be unemployed or out of the labor force.

Table 2.1. Descriptives of CPS MORG data for men, 2003 - 2012.

Percent Mexican immigrant	6.3
Percent Hispanic immigrant, non-Mexican	3.1
Percent native-born, Mexican ancestry	4.4
Percent native-born, non-Mexican Hispanic ancestry	2.3
Percent white (Non-Hispanic, non-immigrant)	64.8
Percent black (Non-Hispanic, non-immigrant)	8.5
Percent unemployed*	6.4
Percent of Mex immigrants unemployed	6.7
Percent of Hisp immigrants, non-Mex unemployed	8.8
Percent of native, Mex ancestry unemployed	8.7
Percent of native, non-Mex Hisp ancestry unemployed	8.8
Percent of white (non-Hisp, non-immigrant) unemployed	5.5
Percent of black (non-Hisp, non-immigrant) unemployed	12.3
Percent unemployed or discouraged**	6.6
Percent of Mex immigrants unemployed or discouraged	6.7
Percent of Hisp immigrants, non-Mex unemployed or discouraged	8.9
Percent of native, Mex ancestry unemployed or discouraged	8.8
Percent of native, non-Mex Hisp ancestry unemployed or discouraged	8.9
Percent of white (non-Hisp, non-immigrant) unemployed or discouraged	5.6
Percent of black (non-Hisp, non-immigrant) unemployed or discouraged	12.6
Percent underemployed (involuntary part-time)	2.5
Percent of Mex immigrants underemployed	4.4
Percent of Hisp immigrants, non-Mex underemployed	4.2
Percent of native, Mex ancestry underemployed	3.6
Percent of native, non-Mex Hisp ancestry underemployed	3.1
Percent of white (non-Hisp, non-immigrant) underemployed	2.0
Percent of black (non-Hisp, non-immigrant) underemployed	3.3
Percent not in the labor force (excluding discouraged workers)	3.0
Percent of Mex immigrants not in the labor force	1.7
Percent of Hisp immigrants, non-Mex not in the labor force	2.2
Percent of native, Mex ancestry not in the labor force	3.2
Percent of native, non-Mex Hisp ancestry not in the labor force	3.3
Percent of white (Non-Hispanic, non-immigrant) not in the labor force	3.1
Percent of black (Non-Hispanic, non-immigrant) not in the labor force	3.8
Controls	
Average age	39.4
Percent less than high school	13.4
Percent high school diploma or equivalent	31.0
Percent some college	26.8
Percent BA or higher	28.8
Percent married	57.6
Percent citizen	89.3
Percent construction and extraction	11.5
Total Sample Size	535,613

*Based on the BLS definition of unemployed (out of work, have actively looked for work during the past four weeks, and currently available for work)

** The BLS defines discouraged workers as those who want a job, have looked for work during the past year but not during the past four weeks because 1) they believe no job is available in their line of work, 2) they had previously been unable to find work, 3) they lack the necessary training or experience, or 4) employers think they are too young or old or they face some other type of discrimination. The BLS definition of discouraged worker excludes those who provide reasons such as family responsibilities, school attendance, illness, and transportation problems for why they have not searched for work in the past four weeks.

Source: Data come from CPS MORG supplements.
Note: Weighted means presented. Sample restricted to non-military men ages 16-64 in their fourth interview.

Results

I first show results from a basic model that predicts employment status (not in the labor force, unemployed, or employed) after controlling for education, occupation (current or most recent), age, marital status, parental status, and citizen status. Logit coefficients predicting unemployment (versus full-time employment) are presented in Table 2.2.

Table 2.2. Logit coefficients from multinomial logistic regression predicting unemployment (versus employment), 2003-2012

	Logit Coefficient	Standard Error
Race and ethnicity (reference is non-immigrant, non-Hispanic white)		
Mexican immigrant	-.24***	(.04)
Hispanic immigrant, non-Mexican	.03	(.04)
Native-born, Mexican ancestry	.14***	(.03)
Native-born, non-Mexican Hispanic ancestry	.34***	(.04)
Native, black	.78***	(.02)
Other	.30***	(.02)
H.S. diploma (reference is less than high school)	-.33***	(.02)
Some college	-.52***	(.02)
College degree	-.74***	(.02)
Age	-.05***	(.003)
Age squared	.001***	(.00004)
Married	-.62***	(.02)
Parental status (reference is parent, children not at home)		
Parent, children at home	-.03	(.02)
Not a parent	.05*	(.02)
Citizen	.21***	(.03)
Construction (reference is Manager)	1.16***	(.03)
N = 535,613		

*p<.05; **p<.01; ***p<.001

Source: Author's compilations. Data come from CPS MORG supplements.

Note: All models include controls for education, age, marital status, parental status, occupation (current or most recent if unemployed or out of the labor force), citizen status, as well as state, metro/non-metro, month, and year fixed effects to control for observed and unobserved geographic and temporal factors that affect employment outcomes. Sample restricted to men ages 16-64 in their fourth interview.

Once I take into account the low levels of education and occupational clustering of Mexican immigrant men, I find that their odds of being unemployed are lower than both native white men and native Hispanic men.[9] Compared to native-born white men, black men have a much

[9]The lower unemployment probabilities for Mexican immigrant men are not driven by higher probabilities of being out of the labor force. The table in Appendix A shows that Mexican immigrant men are

greater chance of being unemployed. Native-born Hispanic (Mexican and non-Mexican) men have a significantly higher likelihood of unemployment than native-born white men, although the gap between whites and native-born Hispanics is not nearly as large as the gap between whites and blacks. As expected, education, marriage, age, and being a parent all have protective effects against unemployment. Working in a construction occupation significantly increases the odds of unemployment. Citizens have a greater chance of being unemployed than non-citizens. There are many reasons non-citizens might have lower unemployment, including lower reservation wages, limited access to UI benefits, a tendency to leave the country when faced with unemployment, or employer preferences for a non-citizen workforce (I investigate these issues in more detail below). Table 2.3 below shows the results when I disaggregate Mexican immigrants based on citizen status.

Table 2.3. Logit coefficients from multinomial logistic regression predicting unemployment (versus employment), Mexican immigrants disaggregated based on citizenship, 2003-2012

	Logit Coefficient	Standard Error
Race and ethnicity (reference is native-born white)		
Mexican immigrant		
Non-citizen	-.46***	(.03)
Citizen	-.21**	(.06)
Non- Mexican Hispanic immigrant		
Non-citizen	-.19***	(.04)
Citizen	.07	(.07)
Native, Mexican ancestry	.14***	(.03)
N = 535,613		

*p<.05; **p<.01; ***p<.001

Source: Author's compilations. Data come from CPS MORG supplements.
Note: Model includes controls for education, age, marital status, parental status, occupation (current or most recent if unemployed or out of the labor force), as well as state, metro/non-metro, month, and year fixed effects to control for observed and unobserved geographic and temporal factors that affect employment outcomes. Sample restricted to men ages 16-64 in their fourth interview.

Non-citizen Mexican men have the lowest odds of unemployment. Mexican immigrant men who are citizens – most of whom should have access to UI benefits – have significantly lower unemployment odds than native-born white men. The odds of unemployment for non-

significantly less likely than native-born whites to be out of the labor force.

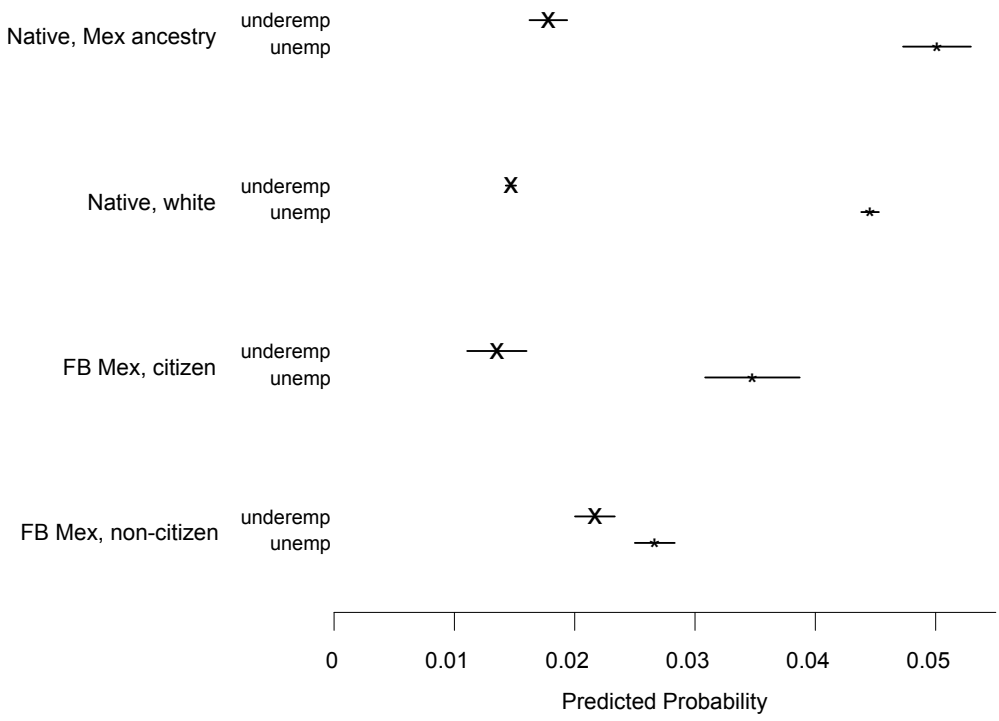
Mexican Hispanic immigrant citizens are not significantly different from native-born whites.

As a result of not having access to UI benefits, non-citizen immigrants may be more likely to seek out or accept part-time employment in lieu of being unemployed. Figure 2.2 below shows unemployment and underemployment (involuntary part-time) predicted probabilities from the model with the five-category dependent variable: not in the labor force, unemployed, voluntary part-time, involuntary part-time, and full-time.[10] By holding the control variables at their means, I am essentially creating a hypothetical situation where foreign-born citizens, non-citizens, and natives have the same values on all the covariates, including education, occupation, and age.[11]

[10]Predicted probabilities generated using the STATA version 13 `margins` command.

[11]Instead of controlling for citizen status in the models used to generate Figures 2.2-2.4, I create dummy variables based on ethnicity and citizen status (i.e., separate variables for non-citizen Mexican immigrant men and citizen Mexican immigrant men)

Figure 2.2: Predicted probabilities of unemployment and underemployment, 2003 - 2012.



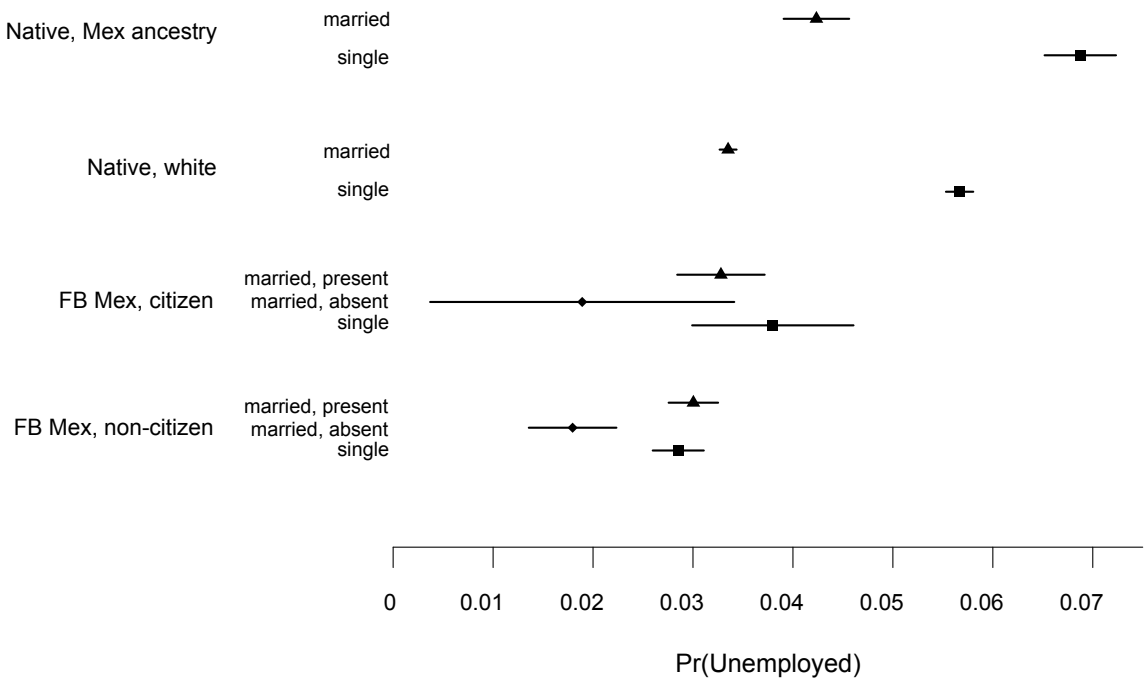
Source: Author's calculations. Data come from the CPS MORG supplements.
Notes: Model includes controls for education, age, marital status, parental status, occupation, as well as state, metro, month, and year fixed effects. Sample restricted to men ages 16-64 in their fourth interview.

As predicted by Hypothesis 1, foreign-born Mexican non-citizens have a higher probability of underemployment than native-born and foreign-born Mexican citizens. Mexican immigrants without citizenship are almost as likely to be underemployed as they are to be unemployed.[12] Yet the underemployment hypothesis only holds for non-citizens. Why do Mexican immigrants with citizenship, most of whom should have access to unemployment benefits, have lower unemployment probabilities than their native-born counterparts?

[12]Results do not support the hypothesis that Mexican immigrant men have low unemployment because they are more likely to be working part-time voluntarily. The predicted probability of voluntary part-time employment for Mexican non-citizens and citizens is 10% and 11%, respectively, compared to 14% for native-born Mexicans and 16% for native-born white men.

It may be that a large share of unemployed immigrants leave the country before they can be counted by the CPS. If this is the case, then I should see variation in unemployment based on propensity to out-migrate. Those immigrants living with spouses in the U.S. presumably have a lower propensity to out-migrate because they face a greater cost of relocating back to Mexico than single immigrants and immigrants with absent spouses. Figure 2.3 below shows the predicted probabilities of unemployment (holding all of the covariates at their mean) by ethnicity and marital status.[13]

Figure 2.3: Predicted probabilities of unemployment by marital status, 2003 - 2012.



Source: Author's calculations. Data come from the CPS MORG supplements.
Notes: Model includes controls for education, age, parental status, occupation, as well as state, metro, month,and year fixed effects. Sample restricted to men ages 16-64 in their fourth interview.

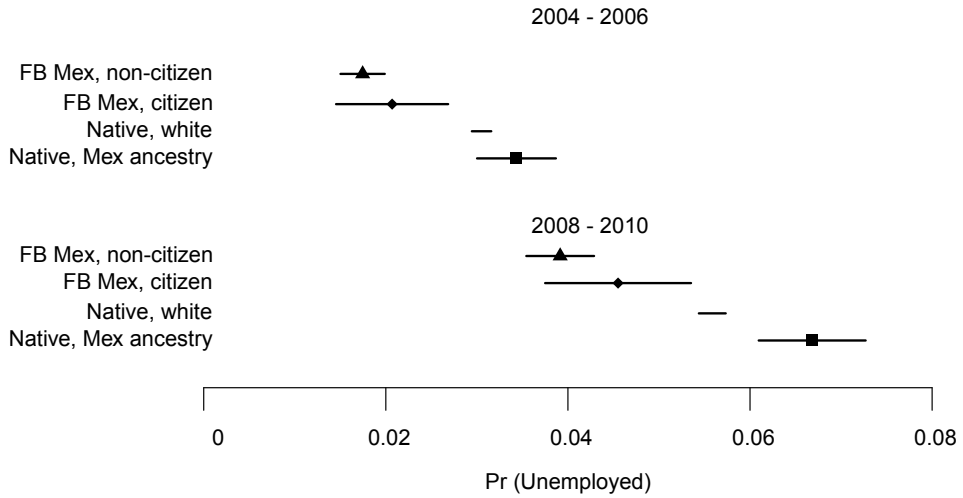
[13]Instead of controlling for marital status, I create dummy variables based on ethnicity and marital status (e.g., Mexican immigrant men with absent spouses).

Figure 2.3 shows how the effect of marital status on unemployment varies by immigrant status.[14] For native-born men, being single (versus being married) significantly increases the odds of unemployment, as predicted by the household specialization model. Among immigrant men, single men and men who live with their spouses have statistically indistinguishable unemployment odds. In other words, single Mexican immigrant men (even those who are citizens and therefore most likely have access to unemployment benefits) have a much lower probability of unemployment than their marital status would predict.

Another factor driving the low unemployment rates of Mexican immigrants may be employer preferences for an immigrant workforce. If employers have greater incentives to hire or retain immigrant workers during periods of economic uncertainty, then the immigrant / native unemployment gap should have increased during the recent recession. While there are no direct measures of employer preferences in the CPS, I can examine whether this hypothesis is consistent with variation in the probability of unemployment over time. Predicted probabilities from the models restricted to before the recession (2004 - 2006) and during the recession (2008 - 2010) are presented in Figure 2.4.

[14]If immigrant men living with spouses are married to U.S. citizens, then compared to other immigrants they may 1) have greater access to government transfers, 2) be less likely to out-migrate, or 3) be less preferable to employers who prefer the least assimilated immigrants. IPUMS has developed an algorithm to match spouses in the monthly CPS supplements through 2010 (King et al., 2010). According to 2003 - 2010 IPUMS CPS data for men in their fourth interview using the IPUMS algorithm for matching spouses, non-citizens constitute 78% of the spouses living with non-citizen Mexican immigrant men and 36% of spouses living with citizen Mexican immigrant men. Among Mexican immigrant men in the IPUMS CPS, non-citizen men living with non-citizen spouses have slightly lower unemployment and slightly higher employment rates than non-citizen men living with citizen spouses. These differences, however, become statistically indistinguishable in a regression analysis with control variables.

Figure 2.4: Predicted probabilities of unemployment by ethnicity and citizen status, before and during the Great Recession.



Source: Author's calculations. Data come from the CPS MORG supplements.
Notes: Model includes controls for education, age, marital status, occupation, as well as state, metro, and month-year fixed effects. Sample restricted to men ages 16-64 in their fourth interview.

Mexican immigrant workers have consistently lower unemployment probabilities than native-born workers. Contrary to Hypothesis 3, there was not a sizeable increase in the unemployment gap between native-born white men and Mexican immigrant men during the recession. The group in Figure 2.4 with the largest increase in the predicted probability of unemployment during the recession was native-born Mexicans.[15]

Discussion

Given their average level of education and their over-representation in high-unemployment construction occupations, Mexican immigrant men should have very high unemployment rates. Yet their unemployment rates resemble those of native-born white men. After adjust-

[15]In separate analyses I disaggregated Mexican men by generation, comparing first, second, and third-plus generations. Both second and third generation Mexican men have significantly higher unemployment probabilities than foreign-born Mexican men. Second and third generation Mexican men have statistically indistinguishable unemployment probabilities.

ing for socioeconomic characteristics (Table 2.2), I find that Mexican immigrant men have significantly *lower* unemployment probabilities than native-born men. While unemployment did increase for all groups during the Great Recession, Mexican immigrant workers consistently have lower unemployment probabilities than other workers (Figure 2.4). I explore three potential explanations: differences in reservation wages based on eligibility for social insurance, out-migrant selection for unemployment, and employer preferences for a migrant workforce. I first consider whether Mexican immigrant men, most of whom are excluded from unemployment benefits, have a greater tendency be working part-time involuntarily. Consistent with Hypothesis 1, I find that foreign-born Mexican non-citizens have a higher probability of involuntary part-time employment (underemployment) than native-born and foreign-born Mexican citizens (Figure 2.2). Compared to unemployment, however, underemployment is a less likely outcome.

Unemployment may be low among non-citizens because most of them cannot access unemployment benefits, but eligibility for social insurance cannot explain why Mexican immigrants with citizenship have such low unemployment probabilities compared to native-born men (Table 2.3, Figures 2.2-2.4). Figure 3 provides mixed support for selective out-migration (Hypothesis 2). On one hand, Mexican immigrant men with absent spouses have the lowest odds of unemployment. On the other hand, if propensity to leave the U.S. was the primary determinant of immigrant unemployment patterns, there should be more variation in unemployment based on spousal ties to the U.S. Figure 2.3 shows very small differences in immigrant unemployment probabilities based on marital status.

While this chapter provides the most comprehensive examination of Mexican immigrant unemployment to date, there are limitations. As Hanson (2006, p. 884) writes, "data sources that include illegal immigrants are almost by definition subject to sample selection problems." It is widely known that the CPS undercounts immigrants, particularly young, illegal and low-skill immigrants (Bean et al., 2001; Ibarraran and Lubotsky, 2007). If the undercounted have disproportionately high unemployment, then the low probabilities of Mexican

immigrant unemployment may be an artifact of the over-representation of skilled immigrants in the CPS. If Mexican immigrant men are more likely than the native-born to report being employed when they are actually unemployed – perhaps because their permission to work in the U.S. is tied to their employment – then my estimates of immigrant unemployment would be understated. Nevertheless, if sampling bias was the primary mechanism behind my findings, then citizen immigrants should not have such low unemployment probabilities (Table 2.3). Sampling bias in the CPS cannot account for the fact that Mexico-born citizens have significantly lower unemployment than natives because citizens face no risk of deportation as a result of changes to their employment status, and there is no evidence to suggest that the Census Bureau undercounts citizen immigrants.

This findings in this chapter present two challenges for social scientists. First, contrary to most account of immigrant assimilation, my results on unemployment and labor force participation suggest rapid employment incorporation among Mexican immigrant men. Second, while the high unemployment rates among native Mexicans might seem like evidence of downward assimilation, this analysis controls for the standard education and occupation indicators of assimilation. Even with a good job and a good education, second generation Mexican immigrant men are significantly more likely than their first generation counterparts to experience unemployment in the U.S.

Chapter 3

STILL AN EQUAL OPPORTUNITY EMPLOYER? PUBLIC SECTOR EMPLOYMENT INEQUALITY AFTER THE GREAT RECESSION

Abstract

Historically, the public sector has served as an equalizing institution through the expansion of job opportunities for minority workers. This chapter examines whether the public sector continues to serve as an equalizing institution in the aftermath of the Great Recession. Using Current Population Survey cross-sectional and longitudinal data, I investigate changes in public sector employment and unemployment between 2003 and 2013. My results point to a post-recession double disadvantage for black public sector workers: they are concentrated in a shrinking sector of the economy, and they are substantially more likely than white and Hispanic public sector workers to be unemployed. These two trends are a historical break for the public sector labor market. I find that race and ethnicity gaps in public sector employment cannot be explained by differences in education, occupation, or any of the other measurable factors that are typically associated with employment. Among unemployed public sector workers, black women are the least likely to transition into private sector employment. Compared to the private sector, however, the post-recession public sector has lower levels of racial and ethnic employment stratification.

Introduction

After recessions, government employment usually expands (Elsby et al. 2011). But after the Great Recession of 2007 - 2009, government employment contracted. Aside from the two week shutdown of the federal government in 2013, most of the layoffs were made by state and local governments (Stevenson and Langan, 2011).[1] Severe cuts were made to police forces, fire departments, social service agencies, and school districts (Dewan and Rich, 2012). Despite the billions allocated to preserve jobs through the American Reinvestment and Recovery Act of 2009, total government employment fell three percent between December 2008 and December 2013. Similar to previous recessions, the Great Recession led to a decrease in sales and income tax receipts. The drop in tax revenue after the Great Recession, however, was especially deep and long-lasting (Gordon, 2012). Compared to earlier recessions, workers stayed unemployed for longer (Kroft et al., 2014). As a result of heightened demand for unemployment benefits and other government subsidies, budgets at both the federal and state level were stretched thin.

There are also political forces that contributed to the contraction of public sector employment. After the 2010 midterm election, the Tea Party and its supporters were vocal about their intent to cut public sector employee benefits and slash public spending (Skocpol and Williamson, 2012). With tax revenues in freefall, political constraints against raising taxes, and a growing number of high-profile political attacks against public sector employees (including those led by governors in Wisconsin and Indiana), many states and municipalities resorted to drastic measures. In 2011, approximately 40% of state and local governments reported layoffs (Center for State and Local Government Excellence, 2012).

The effects of public sector decline will be uneven simply because women – particularly black women – are over-represented in the public sector. In 2010, when state budget shortfalls reached their peak, 17% of black women in the Current Population Survey (CPS) worked in the public sector, compared to 15% of white women, 13% of black men, and 12% of white

[1]The majority of public sector workers are employed by local government; less than a fifth are employed by the federal government.

men (Oliff et al., 2012).[2] Yet there is also evidence that inequality increased *within* the public sector. Among workers in the CPS who reported that their current or most recent job was in the public sector, there was a surge in the black / white unemployment gap between 2008 and 2011. In 2008, 3% of black public sector workers were unemployed compared to 2% of white public sector workers. In 2011, those numbers grew to 8% and 3%, respectively.

What accounts for these new disparities among government workers? How does the public sector compare to the private sector in the post-recession era of public sector decline? This chapter considers three hypotheses. First, I test whether public sector employment inequality reflects compositional differences in education and occupation. Second, I test the hypothesis that privatization reforms have led to the convergence of public and private sector employment patterns. Finally, I examine whether public sector whites, once unemployed, are more likely to find private sector employment.

The dynamics of public sector stratification are important for at least two reasons. First, social scientists consider the public sector to be a major source of economic mobility for black workers (Parks, 2011; Zipp, 1994). Understanding public sector decline should inform debates about between-race and within-race inequality in the United States. Second, by clarifying the link between public sector decline and racial inequality, this analysis advances the literature on the social and economic consequences of the Great Recession (Grusky et al., 2011).

THEORETICAL FRAMEWORK

During the latter half of the 20th century, the public sector provided an employment boom for groups that had been historically underrepresented in the labor market. Between 1961 and 1965, blacks gained 28% of new positions in the federal government despite the

[2]Within each gender group, Hispanics have lower public sector representation rates than both whites and blacks.

fact that they only made up a little more than 10% of the U.S. population (Krislov, 1967). The share of female government workers rose by nearly 70% between 1964 and 1974, and by another 28% by 1981 (Abramovitz, 2012; U.S. Department of Labor Women's Bureau, 1983, 1975). Since 1960, the proportion of blacks working for the government has surpassed the proportion of blacks in the population (Hellriegel and Short, 1972; Pitts, 2011).

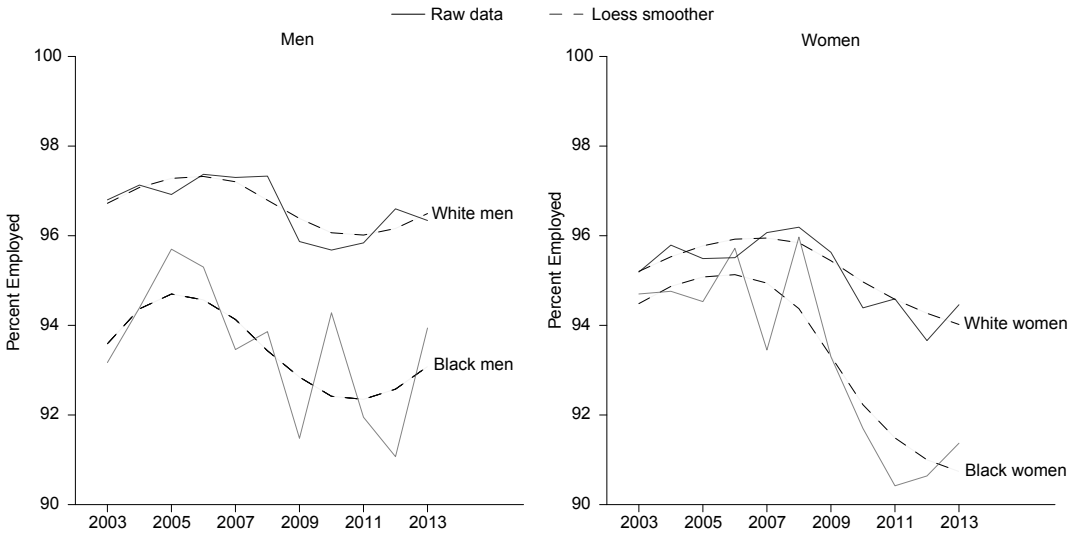
There are both political and structural reasons for the over-representation of blacks and women in government jobs. In the decades following World War II, a series of executive orders and court decisions established equal opportunity employment procedures for government workers. In addition to building political pressure to enforce equal opportunity in the public sector, there was a structural component that expanded public sector opportunities for blacks and women: demand for government labor expanded significantly during World War II. As a result, there was a sharp increase in the overall number of public sector jobs (Grandjean, 1981; Hellriegel and Short, 1972; Krislov, 1967). With a large supply of jobs and a small supply of workers, government managers could change the composition of the public sector workforce without having to displace white men (Krislov, 1967). The number of federal employees peaked again during the Vietnam War. After the mid-1980s, the number of federal employees declined as the federal government increased the amount of work outsourced to contractors (Caplow et al., 2001). The number of state and local jobs, however, continued to increase through the late 2000s (U.S. Census Bureau, 2012).

The public sector has not only provided blacks and women with opportunities for employment – it has provided blacks and women with opportunities for *good* employment. Until the recent past, working for the government often meant having a pension, long-term job security, and regularly scheduled opportunities for upward mobility. Compared to the private sector, the public sector has offered black and female workers with better pay, job stability, and more professional and managerial opportunities (Blank, 1994, 1985; Hout, 1984; Carrington

et al., 1996; Hollister, 2011; Pitts, 2011; Smith, 1977).[3]

That was all before the Great Recession. Among working-age individuals who report that their current or most recent job is in the public sector, there was a large increase in the female black /white employment gap (Figure 3.1).

Figure 3.1: Public sector employment, ages 25 - 54.



Source: Data come from the CPS-MORG files.
Note: Sample restricted to individuals between 25 and 54 in their fourth interview who reported that their current or most recent job was in the public sector.

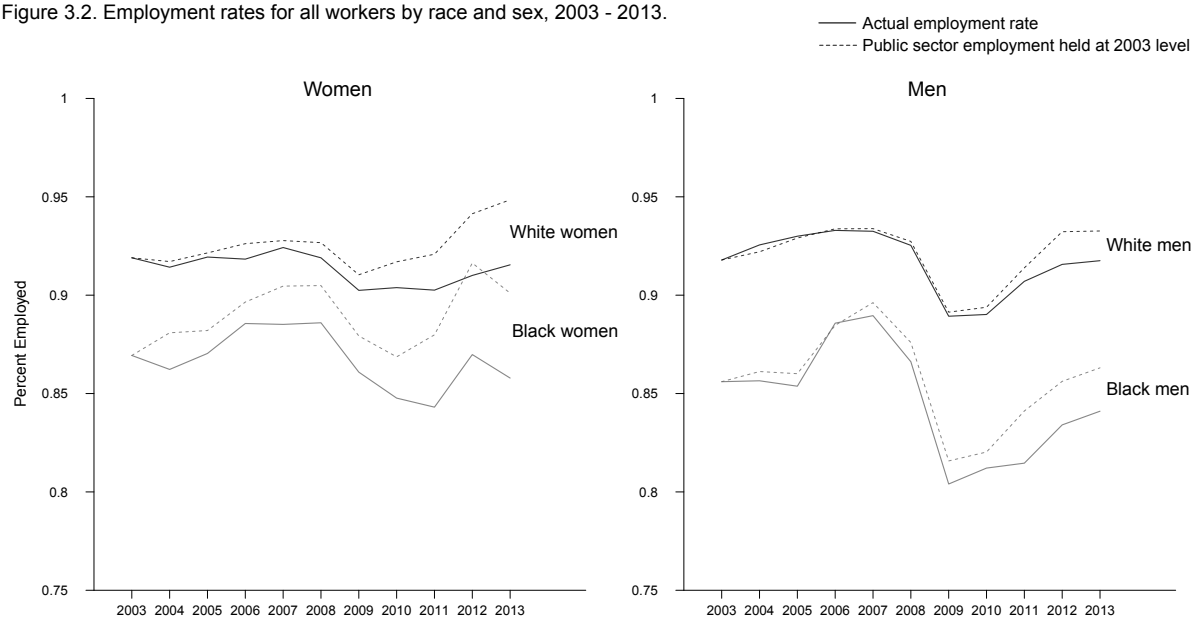
Between 2009 and 2011, there was a steep decline in the employment rates for black women in the public sector. There also appears to be a lag in the recovery for women. By 2013, employment rates for black men had rebounded to the pre-recession range. Employment rates for black women in the public sector bottomed out in 2011. As of 2013, prime-age

[3]It is important to note that not all public sector jobs are good jobs. In both the private and the public sectors, black workers have a lower median wage than whites, and women have a lower median wage than men (results of weekly earnings models available upon request). However, black-white and male-female income inequality is significantly lower in the public sector, even after controlling for public / private differences in occupation and education (Gornick and Jacobs, 1998; Grodsky and Pager, 2001). Using data from the Panel Study of Income Dynamics (1976 - 1998), Heywood and Parent 2012 report that while the raw black / white wage gap in the public sector is positive and significant, the gap disappears after controlling for observables characteristics (e.g., education, experience, region, occupation). Heywood and Parent attribute the absence of a positive wage gap between similarly-situated white and black workers in the public sector to explicit pay scales and rules determining compensation.

employment rates for black female public sector were still 4.6 percentage points lower than the 2008 peak.

As the public sector declines, so too will the effect of the public sector on employment inequality. However, had the public sector not contracted, black and white female employment would be measurably higher. Figure 3.2 below shows the effect of public sector decline on overall employment rates. Holding public sector employment at the 2003 levels increases the 2013 employment rate for white and black women by 3.3 and 4.3 percentage points, respectively. The increase is smaller for men: 1.5 percentage points for white men and 2.2 percentage points for black men.

Figure 3.2. Employment rates for all workers by race and sex, 2003 - 2013.



Source: Author's calculations. Data come from the CPS MORG supplements.
Notes: Sample restricted to individuals ages 16-64 with non-missing occupation information in their fourth interview. All estimates calculated using CPS weights.

Whether the public sector will continue to serve as an equalizing institution depends on the mechanism driving recent changes in public sector inequality. This chapter considers three hypotheses. First, it may be that blacks are over-represented among the types of government workers or in the types of government jobs that are the most vulnerable to

elimination following a recession. Faced with sudden pressure to downsize, public sector managers might try to protect high-skill workers who would be difficult to replace once tax revenues and personnel budgets start to rebound. Data from the CPS suggest that educational credentials reduce the likelihood of becoming unemployed in both the private and the public sectors. Among public sector teachers (roughly a third of the female public sector labor force), holding a master's degree significantly decreases the odds of being laid off (Goldhaber and Theobald, 2013). In the CPS, 45% of white teachers hold a master's degree or higher, compared to just 36% of black teachers.

On the other hand, public sector layoffs may be decided based on the type of job rather than the type of worker. If black women, for example, are concentrated in the type of public sector jobs that tend to be eliminated or scaled back during a budget crisis – net of their individual levels of human capital – then their employment disadvantage may be linked to occupational sorting (Tomaskovic-Devey, 1993). Since the early 1940s, the public sector has been a major source of clerical employment for black women (King, 2003). Data from the CPS indicate that these positions may have been targeted during the recent downsizing of the public sector. Compared to employed public sector workers in the CPS, unemployed public sector workers between 2009 and 2013 are more likely to have worked in administrative and secretarial occupations.

Political accounts of black / white inequality point to specific policies and institutional interventions – rather than differences in education or occupation – as the source of contemporary race disparities. Sites and Parks 2011, p. 62 argue that most of the 20th century reduction in black / white employment and income inequality can be attributed to political forces, such as those that gave rise to civil rights policies in the 1960s and 1970s. Using the Panel Study of Income Dynamics (PSID) data between 1985 and 2007, Wilson et al. 2013 describe widening racial gaps in the incidence, determinants, and timing of downward mobility (including unemployment) among public sector workers. Wilson et al. attribute their findings to the expansion of at-will hiring and the dismantling of bureaucratic employment

protections beginning in the early 2000s. My second hypothesis is that as a result of the public sector adopting private sector mechanisms of stratification, public and private sector levels of employment inequality are converging.

Above and beyond compositional effects and political transformations, public sector employment inequality may be exacerbated by race differences in the probability of finding private sector employment. Wilson et al. 2013 report that in the decade prior to the recession, white men were more likely than black men to leave the public sector for the private sector. My third hypothesis is that public sector whites will be insulated against public sector decline because they are more likely to find private sector work.

DATA AND METHODS

I examine stratification in employment and unemployment using data from the merged outgoing rotation group of the Current Population Survey (CPS-MORG). I use the 2003 - 2013 CPS MORG files (prior to 2003, there were major changes to the Census occupation scheme).[4] I use the MORG files of the CPS instead of the CPS Annual March Demographic survey for two reasons: the MORG samples are larger, and the March samples may be subject to seasonal or recall bias because they are administered once a year rather than monthly (Akerlof and Yellen, 1985; Horvath, 1982; Morgenstern and Barrett, 1974). I restrict the sample to working-age men and women between the ages of 16 and 64.[5] To determine whether black-white employment disparities are the result of differential rates of switching between the public and the private sector, I use longitudinal IPUMS-CPS data linked across all months between 2003 and 2013 (King et al., 2010; Drew et al., 2014). I restrict the

[4]I drop CPS respondents in their eighth interview to avoid observing respondents twice in one sample.

[5]Members of the military who reside in military barracks are excluded from the CPS. Because the CPS is designed to measure unemployment in the civilian labor force, members of the armed forces are not part of the universe for many employment-related questions. For these reasons, members of the armed forces are not included in this analysis.

longitudinal analysis to black and white workers between the ages of 25 and 55 in order to limit transitions associated with school enrollment and retirement.

Because the CPS models include occupation as a control, I further restrict the sample to those from whom the CPS collects occupation information. The CPS collects occupation information from those who report one of the four following conditions the week prior to the survey: 1) employed, 2) laid off / unemployed / looking and ever worked, 3) retired and worked within last 12 months, or 4) disabled and worked within last 12 months or otherwise not in the labor force and worked within last 12 months.[6] I use the BLS definition of unemployment: not currently working, have actively looked for work in the prior four weeks, and currently available for work.

My race/ethnicity categories are: non-Hispanic white, non-Hispanic black, Hispanic, and non-Hispanic other race. The variable I use to examine variation by sector is "class of worker," an indicator of whether the respondent's current job (or most recent job if the respondent is unemployed or out of the labor force) is in the private or public sector. Public sector workers can be further disaggregated by type of public sector employment (federal, state, or local).

I estimate the models separately by gender and sector (public versus private) based on the assumption that pathways to employment and opportunity structures vary by gender and by sector.[7] In the full model, I control for education, occupation, age, age squared, marital status, parental status, and veteran status.[8] Educational attainment, age, and being

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[6]Approximately 77% of the 3,885 discouraged workers in the CPS sample have missing occupation information and are therefore dropped from this analysis. Given that discouraged workers are disproportionately male and black, the CPS results most likely underestimate employment disadvantages among men and among blacks.

[7]I consider non-profit employment, incorporated self-employment, and non-incorporated self-employment to be private sector employment.

[8]I use the 22-category CPS "two-digit" detail occupation recode. The 22 categories are: management, business and financial operations; computer and mathematical science; architecture and engineering; life, physical, and social science occupations; legal occupations; education, training, and library occupations;

married are all associated with a lower risk of unemployment for both men and women (Farber, 2005; Johnson and Mommaerts, 2011). Men living with children tend to have lower unemployment rates than men not living with children. For women in the CPS, living with children increases the probability of unemployment. I include the control for veteran status because veterans tend to have higher unemployment than non-veterans (Kleykamp, 2013; Bureau of Labor Statistics, 2012a).

The dependent variable in all of the employment models represents three outcomes: employed, unemployed, and not in the labor force. I include workers who are not in the labor force for three reasons. First, I do not want to exclude discouraged workers. According to the BLS, "not in the labor force" includes discouraged workers (those who are not working, available for work, have looked for a job during the past year but not during the past four weeks). Second, because the sample is restricted to individuals with non-missing occupation information, all of the individuals who are not in the labor force identify as either public or private sector workers (even if they are not actively looking for work). Third, I want to see whether the subgroups in my sample have differential rates of labor force exit. Some groups might have low unemployment, for example, because they have a high likelihood of leaving the labor force.

Because my dependent variable consists of multiple unordered nominal categories, I estimate the outcome probability for individual i using a multinomial logit model:

$$\ln \frac{\Pr(y = m|\mathbf{X}_i)}{\Pr(y = n|\mathbf{X}_i)} = \mathbf{X}_i(\beta_m - \beta_n),$$

arts, design, entertainment, sports, and media occupations; healthcare practitioner and technical occupations; healthcare support occupations; protective service occupations; food prep and serving occupations; building and grounds cleaning and maintenance; personal care and service; sales; office and administrative support; farming, fishing, and forestry; construction and extraction; installation, maintenance, and repair; production; transportation and material moving. I use this occupation scheme because it identifies occupation groups that were disproportionately affected by the recent recession (e.g., administrative support and construction). With several hundred categories, the more detailed Census occupation scheme would yield cell counts that are too small to quantify race differences within sectors.

where $\mathbf{X}_i$ is the matrix of explanatory variables and the β coefficients correspond to outcomes m and n.[9] I include state, metro/non-metro, year and month fixed effects to control for observed and unobserved geographic and temporal factors that give rise to differential rates of employment and unemployment.

CPS MORG sample sizes and descriptive statistics for sector and employment are presented in Table 3.1:

Table 3.1. Descriptive statistics by sector, race, and sex, 2003 - 2013.

	Women				Men			
	Black	White	Hispanic	Other	Black	White	Hispanic	Other
Percent public sector	21.2%	17.5%	13.4%	15.2%	15.4%	11.8%	7.1%	11.7%
Public Sector								
Percent employed	92.0%	93.7%	93.0%	92.1%	91.9%	94.7%	94.5%	92.0%
Percent unemployed	4.9%	2.4%	3.5%	4.3%	5.0%	2.2%	3.0%	4.1%
Percent out of labor force	3.1%	4.0%	3.5%	3.6%	3.1%	3.1%	2.5%	3.9%
Sample size	12,129	70,848	7,576	6,608	7,163	52,068	5,219	5,355
Total sample size	97,161				69,805			
Private Sector								
Percent employed	85.0%	90.6%	87.1%	90.1%	83.0%	91.1%	89.7%	90.8%
Percent unemployed	10.7%	5.0%	8.2%	5.6%	13.2%	6.0%	7.8%	6.2%
Percent out of labor force	4.4%	4.4%	4.7%	4.3%	3.8%	3.0%	2.5%	3.1%
Sample size	42,957	318,744	49,272	30,667	36,852	370,606	67,640	33,530
Total sample size	441,640				508,628			

Source: Data come from CPS MORG supplements, 2003-2013.
Note: Weighted percentages presented. Sample excludes those with any missing information about their current or most recent job. Sector refers to the respondent's job at the time of the survey if the respondent is employed. For those who are unemployed or out of the labor force, sector refers to the respondent's most recent job. Sample restricted to men and women ages 16-64. Unlike the official unemployment rate which excludes those not in the labor force, the denominator in the above estimates of percent unemployed also includes respondents who are not in the labor force.

Table 3.1 shows the composition of the labor force by sector and the disparities in employment

[9]The independence of irrelevant alternatives assumption of multinomial logit requires that an individual's probability of being in one outcome category relative to another outcome category should not change if a third (irrelevant) category is added to or dropped from the analysis (e.g., there is a chance that an individual's probability of voting for a Democrat versus a Republican will change if a third-party candidate is added to the ballot). Under the IIA assumption, there should be no systematic change in the coefficients if one of the outcomes is excluded from the model. I performed a Hausman test for a violation of IIA, comparing the results from the full model and a model that excludes those who are not in the labor force. According to the results of the Hausman test (available upon request), there is no evidence that the IIA assumption is violated in this analysis.

status by sector, sex, and race. Among both public and private sector workers, black men have the highest rates of unemployment and the lowest rates of employment. Black women are clearly over-represented among government employees: roughly one in five works in the public sector (mostly in state and local government positions). Within each gender group, Hispanics have lower public sector representation rates than both whites and blacks. In both the public and private sectors, black workers have the highest unemployment rates.

RESULTS

Compositional differences in education and occupation

In Tables 3.2 and 3.3 below, I present the results of multinomial regression models that test whether education or occupation can account for differences in the probability of unemployment among public sector workers. In the Appendix, I include results predicting the odds of not being in the labor force, as well as the results for the private sector. The coefficients in the Appendix tables show that the race gaps in unemployment cannot be attributed to differential likelihoods of being out of the labor force.

Table 3.2. Logit coefficients from multinomial logistic regressions predicting unemployment (vs employment), female public sector workers only.

	M1: Baseline			M2: M1 + education			M3: M2 + 22-cat occupation			Full model		
	2003 - 2008	2009 - 2011	2012 - 2013	2003 - 2008	2009 - 2011	2012 - 2013	2003 - 2008	2009 - 2011	2012 - 2013	2003 - 2008	2009 - 2011	2012 - 2013
Black	.65***	.86***	.85***	.51***	.74***	.75***	.52***	.75***	.78***	.55***	.68***	.69***
	(.08)	(.08)	(.11)	(.08)	(.08)	(.11)	(.08)	(.09)	(.11)	(.09)	(.10)	(.12)
Hispanic	.30**	.43***	.67***	.06	.23	.50***	.01	.18	.49***	-.02	.05	.41**
	(.11)	(.12)	(.13)	(.11)	(.12)	(.13)	(.11)	(.12)	(.13)	(.12)	(.13)	(.15)
Other	.73***	.59***	.57***	.63***	.54***	.50***	.63***	.53***	.50***	.59***	.48***	.49**
	(.09)	(.12)	(.14)	(.10)	(.12)	(.15)	(.10)	(.12)	(.15)	(.11)	(.13)	(.16)
Education												
(reference = less than high school)												
H.S. diploma or equivalent				-1.07***	-.84***	-.93***	-.91***	-.70***	-.83***	-.69***	-.54***	-.68***
				(.11)	(.15)	(.18)	(.11)	(.15)	(.19)	(.12)	(.15)	(.19)
Some college				-1.09***	-.85***	-1.13***	-.84***	-.62***	-.95***	-.72***	-.59***	-.91***
				(.11)	(.14)	(.17)	(.11)	(.15)	(.19)	(.12)	(.15)	(.19)
College degree				-1.62***	-1.34***	-1.47***	-1.35***	-1.04***	-1.23***	-1.12***	-.94***	-1.15***
				(.11)	(.14)	(.17)	(.12)	(.16)	(.20)	(.13)	(.16)	(.20)
Additional demographic controls												
Age										-.02***	-.02***	-.01***
										(.003)	(.003)	(.004)
Age-squared										.002***	.002***	.001*
										(.0002)	(.0002)	(.0003)
Veteran										.19	.54**	.87***
										(.20)	(.19)	(.22)
Married										-.21**	-.27**	-.39***
										(.07)	(.08)	(.09)
Children at home										.37***	.30***	.23*
										(.07)	(.08)	(.10)
Level of government												
(reference = federal)												
State government										-.24**	-.54***	-.41**
										(.09)	(.11)	(.13)
Local government										-.44***	-.47***	-.39**
										(.09)	(.10)	(.13)
Sample size	53,964	26,567	16,630	53,964	26,567	16,630	53,964	26,567	16,630	53,964	26,567	16,630
Total sample size		97,161			97,161			97,161			97,161	

*p<.05; **p<.01; ***p<.001

Source: Author's compilations. Data come from CPS MORG supplements, 2003-2013.
Note: Models run separately by sex. Full model includes year, state, metro, and month fixed effects. Sample restricted to individuals ages 16-64 in their fourth interview.

Table 3.3. Logit coefficients from multinomial logistic regressions predicting unemployment (vs employment), male public sector workers only.

	M1: Baseline			M2: M1 + education			M3: M2 + 22-cat occupation			Full model		
	2003 - 2008	2009 - 2011	2012 - 2013	2003 - 2008	2009 - 2011	2012 - 2013	2003 - 2008	2009 - 2011	2012 - 2013	2003 - 2008	2009 - 2011	2012 - 2013
Black	.83***	.98***	.85***	.70***	.86***	.67***	.65***	.80***	.55***	.74***	.92***	.61***
	(.09)	(.10)	(.11)	(.09)	(.10)	(.14)	(.10)	(.11)	(.15)	(.11)	(.12)	(.16)
Hispanic	.31*	.45**	.67***	.12	.23	.08	.08	.18	.04	.10	.26	.01
	(.13)	(.14)	(.13)	(.14)	(.14)	(.19)	(.14)	(.14)	(.19)	(.15)	(.16)	(.21)
Other	.98***	.56***	.57***	.95***	.51***	.87***	.91***	.44**	.77**	.88***	.41***	.82***
	(.10)	(.14)	(.14)	(.10)	(.14)	(.15)	(.10)	(.14)	(.15)	(.11)	(.16)	(.17)
Education												
(reference = less than high school)												
H.S. diploma or equivalent				-.87***	-1.11***	-1.09***	-.72***	-.97***	-.92***	-.34*	-.76***	-.66**
				(.12)	(.15)	(.21)	(.13)	(.15)	(.22)	(.14)	(.17)	(.24)
Some college				-1.04***	-1.13***	-1.14***	-.85***	-.86***	-.88***	-.54***	-.76***	-.73**
				(.12)	(.15)	(.21)	(.13)	(.16)	(.22)	(.14)	(.16)	(.24)
College degree				-1.46***	-1.61***	-1.62***	-1.37***	-1.28***	-1.42***	-.74***	-.91***	-.99***
				(.12)	(.15)	(.21)	(.15)	(.18)	(.24)	(.16)	(.18)	(.26)
Additional demographic controls												
Age										-.02***	-.03***	-.02***
										(.003)	(.004)	(.005)
Age-squared										.001***	.002***	.002***
										(.0003)	(.0003)	(.0004)
Veteran										.02	.32**	.25
										(.10)	(.12)	(.15)
Married										-.79***	-.60***	-.76***
										(.09)	(.11)	(.14)
Children at home										-.27*	-.17	-.16
										(.11)	(.12)	(.16)
Level of government												
(reference = federal)												
State government										-.37***	-.12	-.41**
										(.11)	(.12)	(.13)
Local government										-.28***	-.16	-.39**
										(.10)	(.12)	(.13)
Sample size	38,716	19,033	12,056	38,716	19,033	12,056	38,716	19,033	12,056	38,716	19,033	12,056
Total sample size		69,805			69,805			69,805			69,805	

*p<.05; **p<.01; ***p<.001

Source: Author's compilations. Data come from CPS MORG supplements, 2003-2013.
Note: Models run separately by sex. Full model includes year, state, metro, and month fixed effects. Sample restricted to individuals ages 16-64 in their fourth interview.

Among both male and female public sector workers, blacks have higher odds of unemployment (versus full-time employment) than whites or Hispanics. The second model takes into account differences in educational attainment. Including education only slightly reduces the differences between groups, suggesting that public sector unemployment disparities by race are not attributable to differences in educational attainment. The third column of Tables 3.2 and 3.3 includes education and the 22-category occupation variable (see the Data and Methods section for a list of all the occupations). Again, there are only minor changes in the race effects. It is clear from Tables 3.2 and 3.3 that race disparities in public sector unemployment persist even after controlling for compositional differences in educational attainment and occupation.

After controlling for education and occupation, Hispanic public sector men have unemployment probabilities that are statistically indistinguishable from white public sector men. The pattern is similar for Hispanic public sector women – until 2011. After the public sector started to contract, Hispanic public sector women were significantly more likely than white public sector women to be unemployed.

The coefficients for the control variables are generally consistent with prior research. Age is negatively associated with unemployment (at a decreasing rate). I conducted additional analyses (results available upon request) restricting the sample to workers ages 55 - 64 to see if there are race or ethnic disparities among public sector workers who are approaching retirement (and in some cases, pensions). After including all of the controls (the full model in Tables 3.2 and 3.3), the only statistically significant disparity for this restricted sample was between black and white women after the recession (Hispanics and whites were statistically indistinguishable). Among public sector women ages 55 - 64, black women had significantly higher probabilities of being unemployed when compared to white public sector women. That said, the age slope is consistently negative for all subgroups, before and after the recession. In other words, the protective effect of seniority is evident in all of the models.

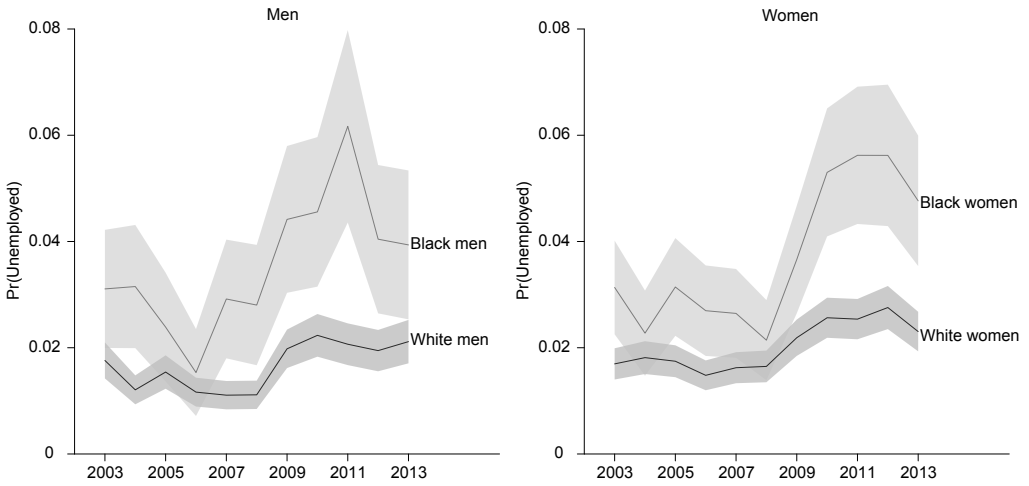
As expected, the odds of unemployment decrease with each education level. Being married reduces the odds of unemployment, although the effect is much stronger for men. Among women, veterans have significantly higher unemployment but only after the onset of the recession. Being a parent with children at home increases the odds of unemployment for women. The parent effects may reflect a household specialization model, in which women's household obligations take away time that could be spent looking for a job.

At first glance, the direction of the effects of working for state and local governments (versus the federal government) appear to be inconsistent with media accounts of public sector layoffs being concentrated at the state and local level. However, less than a fifth of public sector workers are employed by the federal government. Unemployment may be higher among federal workers simply because jobs with the federal government are relatively scarce.[10]

To get a more complete picture of how race gaps in public sector unemployment and employment have changed over time, I also ran models with a race $\times$ year interaction (no year fixed effects). Figures 3.3 - 3.5 below show the predicted probabilities of unemployment and employment from the models with the interaction. I generate the predicted probabilities by holding the control variables at their mean, thereby creating a hypothetical situation in which blacks and whites have the same distribution across the covariates (including education and occupation).

[10]Who is the typical federal, state, or local government employee? Approximately one quarter of state employees and one third of local government employees are teachers. Nearly a third of federal employees work in office or administrative support occupations; 50% of federal administrative support workers are postal workers. Among all public sector employees, half work for local governments, 30% work for state governments, and nearly 20% work for the federal government.

Figure 3.3: Predicted probabilities of unemployment by sex and race for public sector workers, 2003 - 2013.

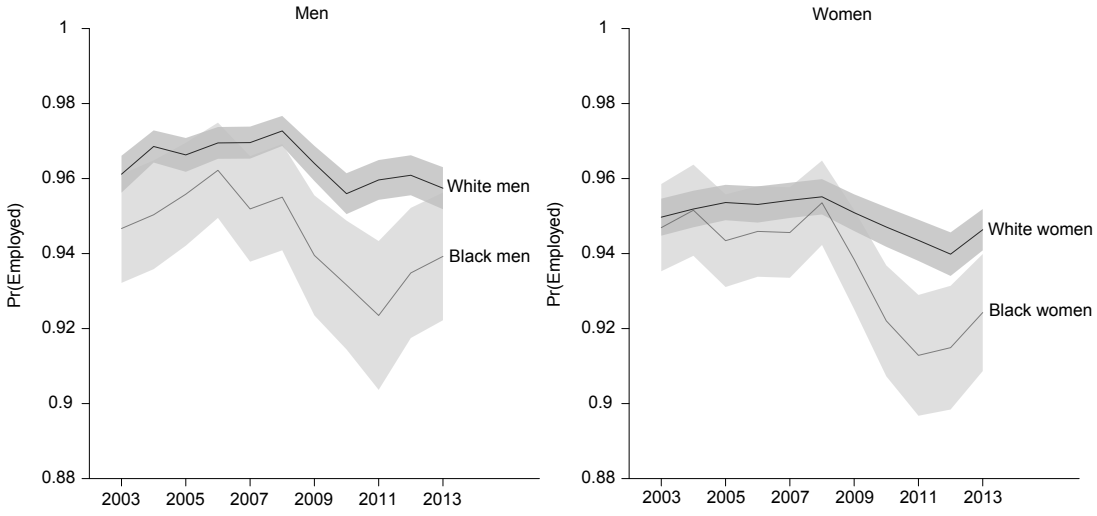


Source: Author's calculations. Data come from the CPS MORG supplements.
Notes: Shaded areas represent 95% confidence intervals. Models includes controls for education, age, marital status, occupation, interactions between year and race, as well as state and month fixed effects. Sample restricted to individuals ages 16-64 in their fourth interview.

Unemployment probabilities increased for all public sector workers as a result of the Great Recession; black workers, however, experienced a much larger increase than white workers. Considering the extent of the financial shock to the public sector, white workers appear to have been well-protected.

Unemployment rates only reflect the population of active job-seekers. The trends in Figure 3.3 could understate or overstate labor force participation depending on whether there are race differences in the propensity to stop looking for a job. Figure 3.4 below shows predicted probabilities of employment among those who reported that their current or most recent job was in the public sector.

Figure 3.4: Predicted probabilities of employment by sex and race for public sector workers, 2003 - 2013.



Source: Author's calculations. Data come from the CPS MORG supplements.
Notes: Shaded areas represent 95% confidence intervals. Models includes controls for education, age, marital status, occupation, interactions between year and race, as well as state and month fixed effects. Sample restricted to individuals ages 16-64 in their fourth interview.

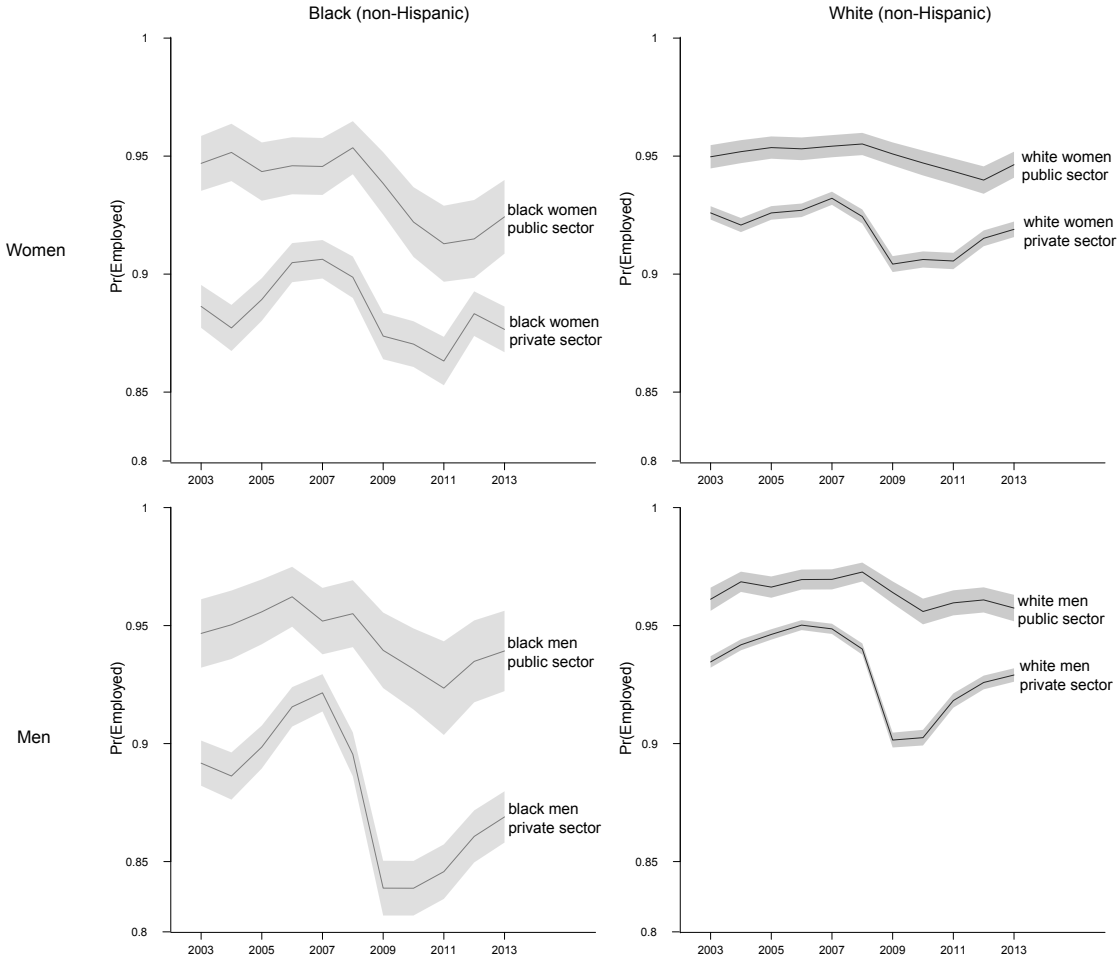
The trends in Figure 3.4 are consistent with Figure 3.3. Among public sector workers, black workers experienced a much larger drop in employment, even after controlling for education, occupation, and other observable factors associated with employment. The unemployment and employment probabilities together suggest that the public sector lost black workers – particularly black women - at a disproportionate rate following the Great Recession.

Public sector versus the private sector

To what extent are the trends in public sector inequality consistent with theories about public / private sector convergence? Figure 3.5 below shows the gaps between public and private sector predicted probabilities of employment (with all of the covariates held at their means). With a few exceptions, the controls for the private sector model are the same as the controls in the public sector model. All of the models used to generate the predicted probabilities include year $\times$ race interactions. Instead of controlling for type of government employment (federal, state, or local), the private sector model includes dummies for non-

profit employment, incorporated self-employment, and non-incorporated self-employment (all of which reduce the odds of unemployment). Model coefficients are presented in the appendix tables.

Figure 3.5: Predicted probabilities of employment by gender, race, and sector.



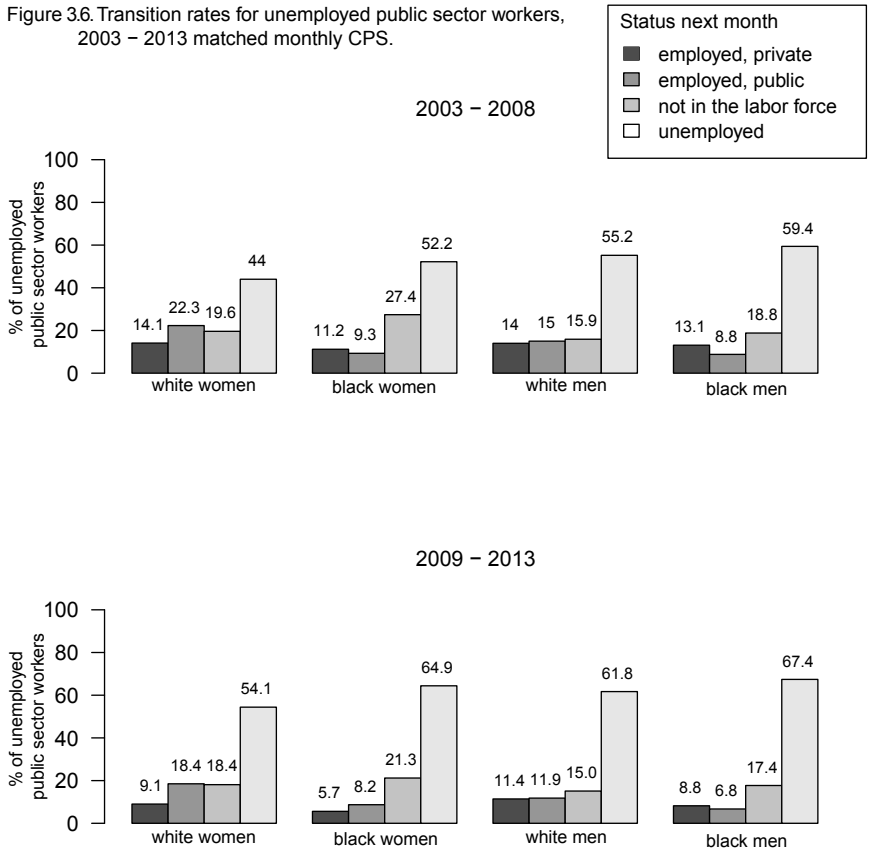
Source: Author's calculations. Data come from the CPS MORG supplements.
Notes: Shaded areas represent 95% confidence intervals. Models includes controls for education, age, marital status, occupation, interactions between year and race, as well as state and month fixed effects. Sample restricted to individuals ages 16-64 in their fourth interview.

Although black workers in the public sector are at a disadvantage relative to white workers, private sector blacks have a much larger disadvantage relative to public sector blacks – even after the public sector started downsizing. Black men have the largest gap between public and private sector probabilities of employment.

Differences in public / private transition rates

I next consider whether unemployed public sector white workers are more likely than their black and Hispanic counterparts to find private sector employment using the matched CPS monthly files. Figure 3.6 below shows transition rates among unemployed public sector workers into private sector employment, public sector employment, and out of the labor force.

Figure 3.6. Transition rates for unemployed public sector workers, 2003 − 2013 matched monthly CPS.



Source: Author's calculations. Data come from longitudinal IPUMS-CPS data.
Notes: Sample restricted to black and white individuals ages 25 - 55.

Among unemployed public sector workers, black men are the least likely of all the race-sex groups to exit unemployment. White women are the most likely to find public sector

employment within a month. Black women are the least likely to transition into private sector employment. Appendix F shows the full matrix of transition probabilities for blacks, whites, and Hispanics. The tables for white men in Appendix F show that compared to other employed public sector workers, white men are the least likely to enter unemployment. Compared to other unemployed public sector workers, black and Hispanic women are the most likely to exit the labor force.

Discussion

This chapter examines the extent to which the public sector serves as an equalizing employment institution after the Great Recession. Blacks are over-represented in a shrinking sector of the economy, and they are more likely than other public sector workers to be unemployed. These two trends are a historical break for the public sector labor market. I tested three hypotheses. I first consider explanations based on compositional differences in education and occupation. Model results show that even after controlling for education, occupation, and a host of other measurable factors associated with labor force attachment, there are significant racial and ethnic gaps in public sector unemployment and employment probabilities – especially after the recession (Tables 3.2 and 3.3, Figures 3.3 - 3.5).

My second hypothesis was that public and private sector patterns of employment stratification converged after the Great Recession. Compared to the private sector, employment disparities are relatively narrow in the public sector (Figure 3.5) – even after the recession when nearly half of all state and local governments reported layoffs. Regardless of the state of the economy, racial and ethnic employment differences are attenuated in the public sector.

My third hypothesis was that public sector whites, once unemployed, are more likely to find private sector employment. The linked IPUMS-CPS monthly files present a grim outlook for minority public sector workers. Compared to similarly situated whites and Hispanics, unemployed black public sector workers are the least likely to transition into private sector

employment. Among black and Hispanic public sector women who are unemployed for at least one month, roughly one in five will make a complete exit from the labor force. White public sector men have advantageous employment outcomes in part because they have low rates of unemployment entry, low rates of labor force exit, and high rates of transitioning out of unemployment into both public and private sector opportunities.

More research and more data are needed to determine how and whether public sector employment disparities are affected by recently-enacted policies at the local and state level. In some states, public sector inequality might be the result of anti-Affirmative Action ballot initiatives. In other states, the source may be legislative responses to budget deficits.[11] Wisconsin, for example, implemented sharp and immediate funding cuts for municipalities in 2011. Black public sector employment started to rebound after 2011 in most states, but in Wisconsin, black public sector employment continued to plummet into 2012. It may be that black workers are more likely to be laid off when the layoffs are triggered by a sudden and significant reduction in funding. When there are more layoff decisions, managers have more opportunities to discriminate.

The protective effect of working in the public sector decreased substantially for minority workers after the Great Recession, while white workers were relatively insulated. The preceding analyses suggest that without a course correction, further efforts to dismantle the public sector will most likely have a negative effect on the workers who have historically gained the most from public sector employment.

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[11]The CPS does not have enough minority public sector workers in every state to conduct a state-level analysis. The large samples in the American Community Survey (ACS) are better suited for an analysis of state-level variation in public sector employment, but the ACS does not measure the timing of employment as precisely as the CPS. (ACS responses can relate to any weekly period throughout the year whereas CPS responses refer to a particular week.) Appendix G shows state and local government employment rates in the ACS for those states that had at least 100 black public sector workers (men and women) in 2008.

Chapter 4

SOURCES OF RACIAL EMPLOYMENT INEQUALITY IN METROPOLITAN LABOR MARKETS

Abstract

During the past three decades, there has been a measurable decline in the black / white employment gap – mainly because of a sharp increase in black female labor force participation. Among men, however, the race gap in employment has not budged in thirty years. This is the first study of employment disparities that simultaneously takes into account human capital differences at the individual level, as well contextual effects, including the availability of public sector and unionized jobs, the presence of foreign-born workers, the extent of residential segregation, and the economic and regulatory climate of local labor markets. I find that black men experience greater employment returns when they reside in areas with 1) a large concentration of public sector jobs, or 2) relatively lax employment, labor, and hiring regulations. I conclude that while black men are more likely to be working when employers have fewer impediments to hiring and firing, black men also benefit from access to highly regulated public sector employment opportunities.

Introduction

The black / white employment gap is shrinking. In October of 1975, according to the

Current Population Survey, white labor force participation was three percentage points higher than black labor force participation (62% versus 59%). As of October 2015, the black / white labor force participation gap was only one percentage point (63% for whites versus 62% for blacks). This decline is primarily the result of increases in black female labor force participation. Between 1975 and 2015, there was a 12 percentage point increase in both black and white female labor force participation (BLS 2015). During the past three decades, black women have consistently had higher labor force participation than white women.

Black men, however, have substantially higher rates of joblessness and lower rates of employment when compared to white men. According to the BLS, the black / white employment ratio among men dropped from .94 in 1975 to .93 in 2015. As a result of the rise in mass incarceration and the exclusion of inmates from employment surveys, the actual employment gap has grown substantially – especially among young, low-skill men. Among 20-34 year old black men without a high school diploma, actual employment rates have fallen by more than half since 1980 (Pettit, 2012).

Even when the samples are restricted to the non-institutionalized population, there are persistent employment gaps between black and white men. Explanations for the gap generally fall into two categories: individual and contextual. Human capital models of employment typically use education and labor market experience as predictors of employment; black workers, on average, have less education and less work experience than white workers (Tomaskovic-Devey et al., 2005). Sociologists have long known that compared to whites with similar levels of education and experience, black men work fewer hours, receive fewer application call backs, and they are more likely to be laid off (Couch and Fairlie, 2010; D'Amico and Maxwell, 1995; Pager et al., 2009).

Given that human capital disparities cannot account for the black male employment disadvantage, sociologists have sought alternative explanations. In addition to the obvious benefit of living in a city with job growth, workers have more job security when they have

access to jobs that are protected – either by unions or by government regulations. Low rates of unionization have been linked to the geographic concentration of joblessness (Wilson, 1987, 1996; Wagmiller and Lee, 2014). Public sector jobs have, historically, provided more job stability and more opportunities for long-term upward mobility (Blank, 1985; Hollister, 2011).

It may be that black workers are concentrated in labor markets with the fewest employment opportunities. Or, it may be that labor market context has a disproportionate impact on black employment. As I demonstrated in the previous chapter, the protective effect of working in the public sector decreased substantially for black workers – especially black women – after the Great Recession. In labor markets with tight labor regulations, employers may be more selective when they hire because they face impediments when they fire (Cohn and Fossett, 1995). Additional labor market characteristics that have an unequal impact on employment outcomes includes segregation, immigration, and the racial composition of the population (Blalock, 1967; Massey and Denton, 1998; Model and Ladipo, 1996; Tolnay, 2001).

This chapter investigates how the effects of labor market context vary by race. I advance the research on the black / white employment gap in three ways. First, I use individual-level data; earlier studies of the effects of labor market context on black employment focus on aggregate differences between metro areas (Cohn and Fossett, 1995; Dickerson, 2007). My contribution is to study patterns both within and between metro areas, with both individual and metro-level characteristics as predictors. Second, I use a modeling strategy that takes into account correlations among individuals within metro areas. Finally, I introduce additional metro area predictors that are theoretically relevant to employment disparities, including the availability of equal opportunity public sector jobs, the presence of foreign-born Hispanics, segregation, and a measure of the stringency of labor regulations within each metropolitan area.

Theoretical Framework

This chapter draws from theories about the contextual effects of unionization, public sector decline, segregation, labor regulations, economic decline, as well as the racial and ethnic composition of the metropolitan labor market. Similar to Wilson's 1996 argument that industrial restructuring led to black employment disadvantages beginning in the 1970s, contemporary employment disparities may be attributable to deunionization and the contraction of the public sector. Declines in union coverage have been linked to the geographic concentration of joblessness among young, less educated black men (Wilson, 1987, 1996; Wagmiller and Lee, 2014). In her study of black / white wage inequality across metropolitan areas using 1990 Census data, McCall 2001 finds that unionization is the strongest predictor of high relative wages for black men, even after controlling for the presence of high-paying manufacturing jobs. On the other hand, there is also evidence to suggest that employment rates and the total number of full-time jobs – especially among young men – are negatively affected by unionization and positively affected by right-to-work laws (Bertola et al., 2007; Krol and Svorny, 2007; Montgomery, 1989). Unions raise the costs associated with turnover. Managers of unionized employees may be more reluctant to make new hires when they know that every worker will be protected. To the extent that employers react to externally induced limitations on their right to fire by being more selective during the hiring process, black workers will have a greater employment disadvantage when unionization rates are high (Cohn and Fossett, 1995; Jacoby, 1985).

Above and beyond unionization, the availability of jobs in the public sector – a sector of the economy that has historically had an over-representation of black workers – might be what distinguishes labor markets with high black employment from labor markets with low black employment. Washington, DC, for example, has consistently had one of the lowest white / black employment ratios. Unlike most other labor markets during the recession, the number of public sector workers in DC increased every year between 2005 and 2010.

In addition to the availability of government and unionized jobs, research suggests that segregation will exacerbate race gaps in labor market participation. Most of the recent sociological literature on segregation focuses on neighborhoods, but as Dickerson 2010, p. 256 argues, concentrated disadvantage within black neighborhoods is the byproduct of the segregated metropolis. Black employment rates are lower in more segregated cities and decrease as cities become more segregated over time (vonLockette, 2010; Dickerson, 2007). More segregated metro areas tend to have more disparities in schooling and more unequal exposure to information about jobs (Massey and Denton, 1998).

Compared to what is known about the decline of the role of the public sector, unions, and segregation, there is far less consensus about the effects of population composition on black employment. The empirical evidence suggests that within a labor queue, employers prefer foreign-born Latino immigrants over blacks. Ethnographic studies have documented rapid replacement of low-skill blacks with foreign-born Hispanic workers in new immigrant destinations (Marrow, 2011; Waldinger and Lichter, 2003). In her study of a large industrial manufacturing firm, Lopez-Sanders (2009, p. 13) describes how employers hold a "defined initial hierarchy of ethnic and gender preferences in which native-born white male workers stood at the top, followed by Hispanic male workers, Hispanic female workers, white American females and, at the bottom, native-born African Americans." On the other hand, demographic studies generally conclude that while immigration negatively affects employment prospects for some less-skilled natives, these losses are "offset" by the complementary effects of immigration on native-born productivity, earnings, and employment (Bean et al. 2012).

Just as there are competing theories about immigration effects, there are competing theories about how black workers are affected by the racial composition of the population. According to queuing theory (Hodge, 1973; Thurow, 1969), black representation is also associated with better economic outcomes for blacks (assuming that employers prefer whites over blacks). As the proportion of blacks in a labor queue increases, the probability of un-

employment for blacks will decrease because there are fewer whites available for employers to hire. An alternative theoretical framework to queuing theory is the threat hypothesis (Blalock, 1967). While queuing theory predicts that lower-ranked minorities will experience better outcomes as the size of their group increases, the threat hypothesis suggests that minorities will experience worse outcomes as their group size increases. According to the threat hypothesis, as a minority group becomes a larger share of the population, the more the majority group will feel threatened. Discrimination and hostility toward the minority group intensifies, leading to worse labor market outcomes for the minority group. As percent black increases at the metro level, according to the threat perspective, black workers should have lower odds of employment.

I also into account the regulatory and economic context of the labor market. Highly regulated markets tend to have fewer growth incentives for new businesses and lower overall employment growth. Some private sector employers may not be willing to hire minority workers when hiring and firing is heavily regulated. In their research on discrimination legislation, Oyer and Schaefer (2002) find that the more susceptible firms are to discrimination litigation, the less likely they are to hire black workers. If minority workers are more likely to be hired when employers have more flexibility, then black / white employment disparities should be lower in areas with fewer regulations. Alternatively, it may be that labor regulations, as many were intended, continue to protect minority workers from discrimination.

Finally, I include a control for the GDP of the metropolitan area in 2011. I expect metro areas with higher GDP to have higher levels of employment, regardless of how the employment is distributed.(In other words, I expect more wealthy metro areas to generate more employment.)

This is the first analysis of black / white employment disparities that simultaneously takes into account human capital disparities at the individual level, as well as the contextual effects of segregation, unionization, immigration, demographic composition, and the availability of

public sector jobs. Earlier studies of employment disparities across metro areas either ignore variation at the individual level (Cohn and Fossett, 1995; Dickerson, 2007; McCreary et al., 1989) or they only focus on one or two cities (Cohn and Fossett, 1996; Mouw, 2000). In addition to the ecological fallacy problem of making inferences about individuals based only on metro-level information, studies at the metro level falsely assume independence among workers within the same metro area. The ecological fallacy problem can lead to spurious conclusions; ignoring within-metro dependencies can lead to unsupported conclusions by way of underestimated standard errors.

Data and Methods

Data for this analysis come from the American Community Survey (Ruggles et al. 2010). My ACS sample includes 341,208 black and white men in 68 metro areas in 2011. Using a multilevel design, I measure the effects of metropolitan characteristics on black and white employment, while also controlling for established individual-level determinants of employment. The weights used in multilevel modeling take into account sample sizes and variation within each metro area (Gelman and Hill, 2007).

I use a two-level (individuals nested within metropolitan areas) linear probability model to predict the probability of being employed with a varying intercept for each metropolitan area:

$$(\Pr[employed_i = 1]) = \alpha_{j[i]} + \beta \mathrm{X}_i$$

$$\alpha_j \sim \mathrm{N}(\gamma \mathrm{U}_j, \sigma_\alpha^2)$$

where U is a matrix of metro-level predictors, γ represents the coefficients for the metro-level regression, σ_α is the standard deviation of the unexplained metro-level errors, X is a matrix of individual-level predictors, and $j[i]$ indexes the metro area where person i resides. I use a linear probability model rather than a logistic model because the coefficients from the linear probability model are much easier to interpret. In general, if the probability of the dependent variable is between .20 and .80, then a linear function is a close approximation (Long, 1997). The overall proportion of men who are employed in my sample is .69.

Table 4.1 below presents the proportions, means, and standard deviations for all of the variables used in the analysis:

Table 4.1. Descriptive statistics, black and white men in the 2011 ACS.

	Proportion	Mean	SD
Employed	0.69		
Black	0.16		
Immigrant	0.07		
Less than H.S.	0.13		
H.S.	0.26		
Some college	0.31		
College	0.30		
Age		41.2	14.37
Married	0.50		
Veteran	0.13		
Children at home	0.32		
Inside central city	0.18		
Outside central city	0.41		
Status unknown	0.41		
Right-to-work state (as of 2011)	0.38		
Metro - level variables			
% Public in 2011		12.87	3.99
% Union in 2011		13.30	6.64
% FB hisp in 2011		6.29	6.43
% Black in 2011		13.30	9.33
Black-white exposure in 2010		35.47	16.43
% Emp change from 2010		0.70	0.94
Index of business "friendliness" of labor regs		3.58	1.12
GDP (logged)		12.22	1.06

Number of observations: 341,208
Number of groups (metro areas): 68

Note: Sample restricted to ages 16-64.

Educational attainment, age, and being married are all associated with a lower risk of unemployment (Farber, 2005; Johnson and Mommaerts, 2011). In the ACS, men living with children have higher employment rates than men not living with children. I include the control for veteran status because veterans tend to have higher unemployment than non-veterans (Kleykamp, 2013; Bureau of Labor Statistics, 2012b). All models include controls for location within with metropolitan area (central city versus outside the central city).

To determine how the effect of metro area context vary by race, I interact black with all of the metro level predictors. I use the ACS to calculate metro level percentages of blacks,

foreign-born Hispanics, percent public sector (i.e., the proportion of all jobs within a metro area that are classified as public sector). To test whether employment gains are evenly distributed across race groups, I include ACS measures of metro areal employment growth rates from the year prior. Given that the ACS does not include any questions about unionization, I use Current Population Survey (CPS) estimates of unionization at the metro level (`www.unionstats.com`). My measure of segregation is based on the American Community Project's black-white exposure estimates from 2010 Census data (Logan and Stults, 2011). Indices of exposure to other groups also range from 0 to 100, where a larger value means that the average black resident lives in a tract with a higher percentage of white residents. Exposure indices depend on two conditions: the overall size of each group and the settlement pattern of each group. I use exposure rather than the more commonly used index of dissimilarity for theoretical reasons. A positive association between black-white exposure and black employment suggests that black workers benefit when they have more to white residents. A negative association may indicate an enclave effect – i.e., black men are more likely to find employment when they are close to other black residents who can help them find employment. If the threat hypothesis is true, then the effects of percent black *and* exposure to whites should both be negative for black workers. I use an index of the stringency of labor regulations at the metro level based on a 2014 survey of 12,000 small business owners (`www.thumbtack.com/survey#/2014`). The survey asked respondents to give a letter grade response to the question "how friendly or unfriendly is your local government with regard to employment, labor, and hiring regulations?" I converted the A - F letter grades to a five point scale.

Results

Table 4.2 below shows the results from a multilevel linear probability model predicting employment for black and white men in the 2011 ACS. As recommended by Gelman (2008), I

standardize all of the continuous variables by centering them at their mean and dividing them by two standard deviations. This method of standardization renders all of the coefficients roughly comparable with each other, including the coefficients for the binary predictors.

Table 4.2. Standardized coefficients from hierarchical linear probability model predicting employment (versus unemployment or not in labor force), black and white men in the 2011 ACS.

	Model 1				Model 2				Model 3			
	Std. Coef	Std. Err.	95% CI		Std Coef	Std. Err.	95% CI		Std Coef	Std. Err.	95% CI	
Race / ethnicity												
Black	-0.13	0.0009	-0.134	-0.127	-0.12	0.002	-0.129	-0.121	-0.12	0.002	-0.129	-0.119
Immigrant	0.03	0.002	0.021	0.030	0.03	0.003	0.029	0.040	0.03	0.003	0.028	0.038
Educ (ref = lths)												
H.S.	0.20	0.002	0.199	0.207	0.21	0.003	0.201	0.211	0.21	0.003	0.200	0.210
Some college	0.26	0.002	0.255	0.263	0.27	0.003	0.261	0.271	0.27	0.003	0.260	0.270
College	0.36	0.002	0.351	0.359	0.36	0.003	0.358	0.368	0.36	0.003	0.357	0.368
Age	-0.05	0.001	-0.054	-0.049	-0.04	0.002	-0.046	-0.039	-0.04	0.002	-0.046	-0.039
Age squared	-0.42	0.003	-0.429	-0.418	-0.43	0.004	-0.437	-0.423	-0.43	0.004	-0.437	-0.423
Married	0.15	0.002	0.143	0.149	0.13	0.002	0.129	0.137	0.13	0.002	0.129	0.136
Veteran	-0.03	0.002	-0.038	-0.031	-0.04	0.002	-0.041	-0.032	-0.04	0.002	-0.041	-0.032
Children at home	0.06	0.002	0.053	0.059	0.05	0.002	0.046	0.053	0.05	0.002	0.046	0.053
Metro status (ref = inside central city)												
Outside central city	0.02	0.002	0.022	0.028	0.03	0.002	0.030	0.038	0.03	0.002	0.028	0.036
Status unknown	0.006	0.002	0.003	0.009	0.02	0.002	0.014	0.024	0.02	0.002	0.013	0.022
Right-to-work state (as of 2011)	0.02	0.001	0.015	0.020	0.001	0.005	-0.009	0.010	0.01	0.005	-0.001	0.019
Metro - level variables												
% Public in 2011					0.02	0.006	0.010	0.035	0.02	0.006	0.011	0.036
% Union in 2011					-0.004	0.008	-0.019	0.011	-0.002	0.008	-0.017	0.014
% FB hisp in 2011					-0.01	0.006	-0.026	-0.002	-0.02	0.006	-0.031	-0.006
% Black in 2011					0.001	0.008	-0.015	0.018	-0.003	0.008	-0.020	0.013
Black-white exposure in 2010					0.0007	0.009	-0.017	0.018	-0.001	0.009	-0.019	0.016
% Emp change from 2010					0.02	0.005	0.011	0.033	0.02	0.005	0.010	0.032
Index of business "friendliness" of labor regs					0.01	0.006	0.0004	0.025	0.01	0.006	0.001	0.026
GDP (logged)					0.01	0.008	-0.004	0.026	0.01	0.008	-0.002	0.029
Interactions												
Black X % public in 2011									0.04	0.005	0.027	0.045
Black X % union in 2011									-0.01	0.007	-0.028	0.001
Black X % fb hisp in 2011									-0.003	0.005	-0.013	0.007
Black X % black in 2011									-0.03	0.008	-0.044	-0.014
Black X black-white exposure in 2010									-0.003	0.007	-0.018	0.011
Black X % emp change from 2010									-0.03	0.005	-0.037	-0.018
Black X biz friendly labor regulations									0.03	0.005	0.019	0.040
Black X GDP									0.04	0.007	0.027	0.052
Black X right-to-work state									0.02	0.007	0.010	0.037
Metro area random effects		No				Yes				Yes		

*p<.05; **p<.01; ***p<.001

Number of observations: 341,208
Number of groups (metro areas): 68

Note: Sample restricted to ages 16-64.

Model 1 does not include any of the metro-level predictors or the metro-level random effects. As expected based on prior research, black men have significantly lower odds of employment than white men (the reference group). Consistent with what I find in Chapter 2, foreign-born men are significantly more likely to be working than native-born men. Age and veteran status are negatively associated with employment; being married and having children at home are positively associated with employment. Living outside of the central city and living in a right-to-work state both have positive effects on employment. The positive employment effect of living in a right-to-work state is consistent with prior research on the link between low turnover costs and employment growth (Krol and Svorny, 2007).

The metro-level variables in Model 2 represent the influence of local labor market context on employment.[1] The public sector effects in Table 4.2 indicate that an eight percentage point (two standard deviation) increase in the proportion of all jobs that are in the public sector is associated with a two percentage point increase in the probability of being employed. Model 2 predicts that a 12 percentage point increase in percent foreign-born Hispanics within a metro area will lead to a one percentage point reduction in employment for black and white workers. A two unit increase in the index of "business friendliness" – that is, an increase in the ratings given by local business owners from of a 'C' (not very business friendly) to an 'A' (very business friendly) – is predicted to increase employment by one percentage point. While there are metro-level variables that are statistically distinguishable from zero, taking into account metro-level characteristics only slightly reduces the effect of being black.

Model 3 interacts the metro-level predictors with race. According to Model 3, black employment is more sensitive to labor market context. Model 3 predicts that black men will experience a six percentage point increase in the probability of employment for every eight percentage point increase in the proportion of a metro area's jobs that are in the public sector. Consistent with the threat hypothesis, black men have lower employment odds when

[1]The largest variance inflation factor for the level two variables is 2.8, which is smaller than the range of variance inflation factors that are indicative of multicollinearity (O'Brien, 2007).

they live in metro areas with large black populations. A relatively large presence of foreign-born Hispanics reduces the odds of employment for both white and black men. Even though black men benefit more from living in a metro area with a high GDP, the coefficients for employment *growth* suggests that black workers, on average, receive a lower share of a metro area's employment gains. And yet, black workers benefit more from living in a right-to-work state and a business-friendly climate than white workers. This last finding is consistent with the hypothesis that employers are more likely to hire black workers when there are fewer impediments to firing them.

Discussion

This chapter examines how labor market context shapes black and white male employment probabilities following the Great Recession. I use data from 2011, the year the black male employment-to-population ratio dropped to 56.6 percent, a low not seen since the late 1960s when the Bureau of Labor Statistics began tracking detailed employment status by race and sex. I tested seven metropolitan area predictors that are theoretically relevant to employment disparities: the prevalence of public sector jobs, unionization rates, segregation, the demographic composition of the labor market (percent black and percent foreign-born Hispanic), the stringency of labor management regulations, and GDP. It is important to note that while there are metro-level variables that are statistically significant, including metro-level characteristics only slightly reduces the effect of being black.

After taking individual-level differences in education and family composition into account, the contextual factors that have a measurable effect on individual-level employment are public sector rates (increases employment), the presence of foreign-born Hispanics (slightly decreases employment), and lax labor regulations (slightly increases employment). The interactions in Model 3 (Table 4.2) indicate that the prevalence of public sector jobs is especially important for black men (compared to white men). Black and white men appear to be sim-

ilarly affected by the presence of foreign-born Hispanics (small negative effect on black and white male employment). As predicted by the threat hypothesis, the proportion of residents within a metro area who are black is inversely associated with black male employment.

What about other aspects of labor market context? Unions may still be protective for black workers, but the contextual effect of unionization on the black / white employment gap is now statistically indistinguishable from zero. In fact, black men appear to experience slightly *higher* employment probabilities when they live in right-to-work states. I also find some evidence of threat effects: black men have slightly lower odds of being employed when they live in areas with a high concentration of blacks. And yet, I also find that exposure to whites has no discernable effect on black male employment. As others have suggested, it may be that segregation effects operate at the level of neighborhoods, not labor markets (e.g., Charles 2003, Taylor 1995).

More data are need to identify the contextual mechanisms that contribute to the black employment disadvantage. In metro areas with lax labor regulations, what is the black / white gap in the *quality* of jobs? In her study of contextual predictors of income inequality, McCall (2001) reports that a high prevalence of casual employment within a metro area actually improves the wages of black men relative to white men. As McCall (p. 532) notes, the improved economic standing of black men in these cases may simply reflect the low economic standing of white men within informal labor markets. And yet in my ACS sample, there is actually a small positive correlation (.27) at the metro level between white male employment and business-friendly labor regulations. Discriminatory employers may be especially reluctant to hire minority workers when they know that once hired, those workers will be difficult to fire. If this is the case, then more research is needed to explain why employment protections operate differently depending on whether the employer is in the private or the public sector.

Chapter 5

CONCLUSION: CONSEQUENCES OF UNEQUAL UNEMPLOYMENT

In a July 2014 speech, President Obama proclaimed that the U.S. economy has "recovered faster and come farther than almost any other advanced country on Earth." In support of this claim, the White House released a report showing that the U.S. and Germany are the only advanced countries who can report a rebound of real GDP per working-age person to pre-recession rates. Indeed, as of the first quarter of 2016, payrolls are increasing and the official unemployment rate has dropped to five percent.

The official unemployment rate does not take into account labor force exit. The share of prime-age men ages 25 to 54 who are not working has more than tripled since the 1960s (Appelbaum, 2014). In 2000, the U.S. had one of the highest employment rates among developed countries. Now the U.S. is ranked near the bottom of the list.

As the previous chapters demonstrate, the non-employed population is disproportionately non-white. Permanent joblessness is spatially concentrated in neighborhoods that are also racially segregated (Cordova et al., 2016). Among those post-recession prime age men in the CPS who are no longer looking for work, approximately 18% are black (compared to just 7% of the employed population). Because of the CPS excludes the institutionalized population, these estimates understate true race disparities in labor force disengagement. For young black men without a high school diploma, the actual employment rate – including the incarcerated population – has fallen by more than half since 1980 (Pettit, 2012).

An analysis of the causes of labor force exit is beyond the scope of this dissertation. What is clear is that the private sector is recovering, while the public sector is not. Since the onset of the Great Recession, private employers have added five million jobs, while the government has lost 323,000 (Lowrey, 2016). Chapters 3 illustrates the long-term consequences of public sector decline: the loss of women, particularly black women, from the labor force. Among unemployed workers who most recently worked in the public sector, 1) women are more likely than their men to stop looking for work, and 2) black women are the least likely to transition into private sector employment. Continued public sector decline will only increase the flow of women and minority workers into the "missing worker" class.

There is one minority group that had better post-recession employment outcomes than white men: foreign-born Mexican men. As Chapter 2 demonstrates, employment rates for Mexican immigrant men have been consistently high relative to other groups. Given their low levels of education and their concentration in high-unemployment construction occupations, Mexican immigrant men should have very high unemployment rates. Yet their unemployment rates are similar to those of native-born white men. After adjusting for socioeconomic characteristics, I find that Mexican immigrant men have significantly lower unemployment probabilities than native-born men. The relatively high rates of Mexican immigrant underemployment suggest that part of the reason for their low rates of unemployment is a greater willingness to seek out or accept part-time employment. Access to unemployment benefits may also play a role, but that does not explain why I observe low unemployment among Mexican immigrants with citizenship (most of whom should have access to unemployment benefits).

This dissertation presents a challenge for immigration scholars. In Chapter 2, I find both rapid employment incorporation among Mexican immigrant men and high unemployment among native-born Mexican men. While these two trends might seem like evidence of downward assimilation, my models control for standard education and occupation indicators of assimilation. More research is needed to understand why second and third generation Mexi-

can immigrants have higher unemployment than the first generation. Given the limitations of the CPS, I cannot rule out selective out-migration for unemployment, selective in-migration based on employability, and employer preferences for Mexican immigrants. More employer data are needed to understand the extent to which employers have developed a preference for workers without any legal standing. As the number of temporary visas for agriculture workers has surged in recent years, so too has the number of legal complaints against agriculture employers for discriminating against native-born workers (Bronner, 2013). Chapter 4 documents slightly negative effects of immigration on native-born employment across cities, but the full extent of immigrant exploitation within firms has yet to be quantified.

A major limitation of my dissertation is that I cannot pinpoint the causes of post-recession employment inequality. Drawing from prior research, I can only speculate about the micro-level processes that may or may not give rise to employment disparities. For example, there is an extensive body of literature on the preferences of managers for those who are demographically similar to themselves.[1] And yet, this tendency of vertical homophily is not a sufficient explanation for what I observe in my analyses. Women and minorities are more likely to leave the public sector than their white male counterparts despite the fact that most (56%) of the public sector managers in the CPS are female or black. Vertical homophily also does not explain high employment rates among Mexican immigrant men.

Wilson et el. (2013) contend that growing inequality within the public sector is the result of an increase in managerial discretion. On the other hand, more recent research from Dobbin et al. (2015) finds that initiatives designed to limit managerial discretion usually backfire because most managers know how to circumvent formal procedures. Dobbin et al. conclude that the effects of bureaucratic reforms will vary depending on how the reforms influence managerial motivation and whether the reforms create labor-market transparency.

Aside from raising taxes, there are practical steps that can be taken to mitigate the un-

[1]See Castilla (2011) for a summary.

equal effects of public sector decline. Policy and legal scholars have spent decades identifying and testing solutions to the conflict between affirmative action and seniority-based layoffs in the public sector. A series of court cases during the 1973 - 1975 economic recession highlighted the disparate effects of the "last hired, first fired" layoff rule. Minority groups argued that seniority-based layoff protections disproportionately affected women and blacks – not only because these groups were relatively new entrants in the public sector, but also because these groups faced more barriers to promotions that would have protected them in the event of a layoff. Judges during this period, understandably reluctant to modify seniority-based systems, recommended voluntary solutions (Ferguson, 1975). These voluntary solutions included separating seniority rosters by race and sex, early retirement, and reductions in hours or compensation across the entire workforce (Flanagan, 1984). What is clear from these earlier studies is that an equitable workforce reduction requires at least some economic foresight and a lot of careful planning.

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Appendix A

APPENDIX A. Logit coefficients from multinomial logistic regressions, 2003-2012

	Outcomes (relative to employed):			
	Unemployed		Not in the Labor Force	
Base model:	Logit Coefficient	Standard Error	Logit Coefficient	Standard Error
Race and ethnicity (reference is non-immigrant, non-Hispanic white)				
Mexican immigrant	-.24***	(.04)	-.53***	(.06)
Hispanic immigrant, non-Mexican	.03	(.04)	-.23**	(.07)
Native-born, Mexican ancestry	.14***	(.03)	-.20***	(.05)
Native-born, non-Mexican Hispanic ancestry	.34***	(.04)	-.08	(.06)
Native-born, Black	.78***	(.02)	.26***	(.03)
Other	.30***	(.02)	.19***	(.03)
H.S. diploma (reference is less than high school)	-.33***	(.02)	-.41***	(.02)
Some college	-.52***	(.02)	-.20***	(.02)
College degree	-.74***	(.02)	-.61***	(.03)
Age	-.05***	(.003)	-.31***	(.004)
Age squared	.001***	(.00004)	.004***	(.00005)
Married	-.62***	(.02)	-.45***	(.03)
Parental status (reference is parent, children not at home)				
Parent, children at home	-.03	(.02)	-.32***	(.03)
Not a parent	.05*	(.02)	.06	(.03)
Citizen	.21***	(.03)	.19***	(.05)
Construction (reference is Manager)	1.16***	(.03)	.90***	(.04)
Citizenship model:				
Race and ethnicity (reference is native-born white)				
Mexican immigrant				
Non-citizen	-.46***	(.03)	-.77***	(.06)
Citizen	-.21**	(.06)	-.35**	(.11)
Non- Mexican Hispanic immigrant				
Non-citizen	-.19***	(.04)	-.41***	(.07)
Citizen	.07	(.07)	-.23*	(.11)
Native-born, Mexican ancestry	.14***	(.03)	-.20***	(.05)
Marital status model:				
Race and ethnicity (reference is married native-born white)				
Mexican immigrant non-citizen				
Single	.03	(.06)	-.49***	(.10)
Married - spouse present	.09	(.06)	-.18	(.10)
Married - spouse absent	-.44**	(.13)	-.33	(.19)
Mexican immigrant citizen				
Single	.12	(.11)	-.12	(.18)
Married - spouse present	-.03	(.07)	-.14	(.13)
Married - spouse absent	-.60	(.42)	-.90	(.72)
Native-born, Mexican ancestry				
Married	.24***	(.04)	.10	(.07)
Single	.75***	(.03)	.19***	(.05)
Native-born, single white	.56***	(.02)	.43***	(.03)
Recession model:				
2004 - 2006: race and ethnicity (reference is native-born white)				
Mexican immigrant				
Non-citizen	-.59***	(.07)	-.88***	(.10)
Citizen	-.40*	(.16)	-.20	(.19)
Non- Mexican Hispanic immigrant				
Non-citizen	-.28**	(.10)	-.49***	(.13)
Citizen	-.18	(.18)	-.13	(.05)
Native-born, Mexican ancestry	.12	(.07)	-.16	(.08)
2008 - 2010: race and ethnicity (reference is native-born white)				
Mexican immigrant				
Non-citizen	-.38***	(.05)	-.72***	(.10)
Citizen	-.23*	(.10)	-.57**	(.20)
Non- Mexican Hispanic immigrant				
Non-citizen	-.11	(.07)	-.54***	(.14)
Citizen	.11	(.10)	-.47*	(.22)
Native-born, Mexican ancestry	.19***	(.05)	-.26**	(.08)
Age-at-arrival model:				
(reference is Mexican immigrant, arrived between 0 - 4 years old)				
Mexican Immigrant				
Arrived ages 5-9	-.09	(14)	-.31	(.26)
Arrived ages 10-14	-.22	(.13)	-.25	(.24)
Arrived ages 15-19	-.35**	(.11)	-.15	(.19)
Arrived ages 20-29	-.17	(.11)	.21	(.19)
Arrived ages 30-39	-.17	(.13)	.19	(.23)
Arrived ages 40+	.001	(.16)	.20	(.26)
Native, Mex ancestry	.18	(.10)	.33	(.18)
Native, white	.04	(.10)	.53**	(.17)
Native, African-American	.82***	(.10)	.79***	(.18)
Other race	.34**	(.10)	.45*	(.18)

N=535,613

*p<.05; **p<.01; ***p<.001

Source: Author's compilations. Data come from CPS MORG supplements.

Note: All models include controls for education, age, marital status, citizen status, occupation, as well as state, metro/non-metro and month and year fixed effects to control for observed and unobserved geographic and temporal factors that give rise to differential rates of employment. Sample restricted to men ages 16-64 in their fourth interview.

Appendix B

APPENDIX B. Race / ethnicity logit coefficients from logistic regressions predicting unemployment, excluding those not in the labor force, 2003-2012

	Discouraged workers = unemployed		Excluding discouraged workers	
Base model:	Logit Coefficient	Standard Error	Logit Coefficient	Standard Error
Race and ethnicity (reference is non-immigrant, non-Hispanic white)				
Mexican immigrant	-.23***	(.04)	-.25***	(.04)
Hispanic immigrant, non-Mexican	.03	(.04)	.03	(.04)
Native, Mexican ancestry	.13***	(.03)	.14***	(.03)
Native, non-Mexican Hispanic ancestry	.33***	(.04)	.34***	(.04)
Native, black	.79***	(.02)	.78***	(.02)
Other	.31***	(.02)	.30***	(.02)
Citizenship model:				
Race and ethnicity (reference is native-born white)				
Mexican immigrant				
Non-citizen	-.46***	(.03)	-.47***	(.03)
Citizen	-.20**	(.06)	-.21**	(.06)
Non- Mexican Hispanic immigrant				
Non-citizen	-.21***	(.04)	-.20***	(.04)
Citizen	.09	(.07)	.07	(.07)
Native, Mexican ancestry	.13***	(.03)	.14***	(.03)
	N=518,830		N=518,250	

*p<.05; **p<.01; ***p<.001

Source: Author's compilations. Data come from CPS MORG supplements.
Note: All models include controls for education, age, marital status, occupation, citizen status, as well as state, metro/non-metro and month and year fixed effects to control for observed and unobserved geographic and temporal factors that give rise to differential rates of employment. Sample restricted to men ages 16-64 in their fourth interview.

Appendix C

APPENDIX C. Logit coefficients from multinomial logistic regressions without occupation as a control, 2003-2012

	Outcomes (relative to employed):			
	Unemployed		Not in the Labor Force	
Base model:	Logit Coefficient	Standard Error	Logit Coefficient	Standard Error
Race and ethnicity (reference is non-immigrant, non-Hispanic white)				
Mexican immigrant	-.17***	(.04)	-.93***	(.03)
Hispanic immigrant, non-Mexican	.08*	(.04)	-.59***	(.03)
Native-born, Mexican ancestry	.20***	(.03)	.05*	(.02)
Native-born, non-Mexican Hispanic ancestry	.36***	(.03)	.31***	(.02)
Native-born, Black	.77***	(.02)	.66***	(.01)
Other	.29***	(.02)	.35***	(.01)
H.S. diploma (reference is less than high school)	-.40***	(.02)	-.92***	(.01)
Some college	-.76***	(.02)	-1.02***	(.01)
College degree	-1.21***	(.02)	-1.66***	(.01)
Age	-.07***	(.003)	-.30***	(.002)
Age squared	.0008***	(.00004)	.004***	(.00002)
Married	-.65***	(.02)	-.72***	(.01)
Parental status (reference is parent, children not at home)				
Parent, children at home	-.04*	(.02)	-.51***	(.01)
Not a parent	.05*	(.02)	-.04**	(.01)
Citizen	.14***	(.03)	.04*	(.02)
Citizenship model:				
Race and ethnicity (reference is native-born white)				
Mexican immigrant				
Non-citizen	-.22***	(.05)	-1.10***	(.04)
Citizen	-.11	(.06)	-.70***	(.05)
Non- Mexican Hispanic immigrant				
Non-citizen	.03	(.06)	-.80***	(.04)
Citizen	.12	(.07)	-.36***	(.05)
Native-born, Mexican ancestry	.20***	(.03)	.05*	(.02)
Marital status model:				
Race and ethnicity (reference is married native-born white)				
Mexican immigrant non-citizen				
Single	-.02	(.05)	-.64***	(.03)
Married - spouse present	.05	(.04)	-.86***	(.04)
Married - spouse absent	-.56**	(.02)	-1.45***	(.11)
Mexican immigrant citizen				
Single	.25*	(.11)	-.15	(.07)
Married - spouse present	.09	(.07)	-.68***	(.06)
Married - spouse absent	-.52	(.42)	-1.97***	(.40)
Native-born, Mexican ancestry				
Married	.29***	(.04)	.14***	(.03)
Single	.84***	(.03)	.64***	(.02)
Native-born, single white	.59***	(.02)	.48***	(.01)
Recession model:				
2004 - 2006: race and ethnicity (reference is native-born white)				
Mexican immigrant				
Non-citizen	-.44***	(.07)	-1.08***	(.05)
Citizen	-.34*	(.16)	-.59***	(.09)
Non- Mexican Hispanic immigrant				
Non-citizen	-.16	(.10)	-.63***	(.06)
Citizen	-.15	(.17)	-.37***	(.10)
Native-born, Mexican ancestry	.20**	(.06)	.06	(.04)
2008 - 2010: race and ethnicity (reference is native-born white)				
Mexican immigrant				
Non-citizen	-.23***	(.05)	-1.02***	(.05)
Citizen	-.12	(.09)	-.71***	(.08)
Non- Mexican Hispanic immigrant				
Non-citizen	.03	(.07)	-.84***	(.07)
Citizen	.16	(.10)	-.41***	(.09)
Native-born, Mexican ancestry	.24***	(.05)	.03	(.04)

N=640,262

*p<.05; **p<.01; ***p<.001

Appendix D

APPENDIX D. Logit coefficients from multinomial logistic regressions predicting unemployment and not in the labor force (vs employment), public sector workers only.

	Public sector men					
	Unemployed			Not in the Labor Force		
	2003 - 2008	2009 - 2011	2012 - 2013	2003 - 2008	2009 - 2011	2012 - 2013
Black	.74***	.92***	.61***	.10	-.07	.11
	(.11)	(.12)	(.16)	(.11)	(.16)	(.18)
Hispanic	.10	.26	.01	-.36*	-.09	-.41***
	(.15)	(.16)	(.21)	(.15)	(.18)	(.07)
Other	.88***	.41**	.82***	.42***	.30	.22**
	(.11)	(.16)	(.17)	(.11)	(.17)	(.08)
Sample size	38,716	19,033	12,056	38,716	19,033	12,056
Total sample size		69,805			69,805	

	Public sector women					
	Unemployed			Not in the Labor Force		
	2003 - 2008	2009 - 2011	2012 - 2013	2003 - 2008	2009 - 2011	2012 - 2013
Black	.55***	.68***	.69***	-.18*	-.09	-.07
	(.09)	(.10)	(.12)	(.08)	(.12)	(.15)
Hispanic	-.02	.05	.41**	-.17	-.12	-.0001
	(.12)	(.13)	(.15)	(.10)	(.14)	(.17)
Other	.59***	.48***	.49**	.02	.04	-.03
	(.11)	(.13)	(.16)	(.10)	(.15)	(.18)
Sample size	53,964	26,567	16,630	53,964	26,567	16,630
Total sample size		97,161			97,161	

*p<.05; **p<.01; ***p<.001

Source: Author's compilations. Data come from CPS MORG supplements, 2003-2013.

Note: Model includes controls for education, occupation, age, age-squared, veteran status, marital status, parental status, as well as year, state, metro, and month fixed effects. Sample restricted to individuals ages 16-64 in their fourth interview.

Appendix E

APPENDIX E. Logit coefficients from multinomial logistic regressions predicting unemployment and not in the labor force (vs employment), private sector workers only.

	Private sector men					
	Unemployed			Not in the Labor Force		
	2003 - 2008	2009 - 2011	2012 - 2013	2003 - 2008	2009 - 2011	2012 - 2013
Black	.79***	.69***	.80***	.25***	.25***	.17*
	(.03)	(.03)	(.04)	(.04)	(.06)	(.08)
Hispanic	-.15***	-.09**	-.10*	-.36***	-.37***	-.41***
	(.03)	(.03)	(.04)	(.04)	(.06)	(.07)
Other	.27***	.18***	.09	.22***	.17***	.22**
	(.04)	(.04)	(.06)	(.05)	(.07)	(.08)
Sample size	283,256	137,082	88,290	283,256	137,082	88,290
Total sample size		508,628			508,628	

	Private sector women					
	Unemployed			Not in the Labor Force		
	2003 - 2008	2009 - 2011	2012 - 2013	2003 - 2008	2009 - 2011	2012 - 2013
Black	.71***	.52***	.57***	.06	.005	-.03
	(.03)	(.03)	(.05)	(.04)	(.06)	(.07)
Hispanic	.16***	.08*	.11*	-.10**	-.20***	-.16
	(.03)	(.04)	(.05)	(.03)	(.05)	(.06)
Other	.21***	.14**	.07	.09*	.10	-.003
	(.04)	(.05)	(.06)	(.04)	(.06)	(.08)
Sample size	245,229	119,514	76,897	245,229	119,514	76,897
Total sample size		441,640			441,640	

*p<.05; **p<.01; ***p<.001

Source: Author's compilations. Data come from CPS MORG supplements, 2003-2013.

Note: Model includes controls for education, occupation, age, age-squared, veteran status, marital status, parental status, as well as year, state, metro, and month fixed effects. Sample restricted to individuals ages 16-64 in their fourth interview.

Appendix F

APPENDIX F **Transition probabilities, matched monthly Current Population Survey.**

2003 - 2008

White women

	Status next month					
	Employed - public sector	Unemployed - public sector	Employed - private sector	Unemployed - private sector	Unemployed - no sector	Not in the labor force
Employed - public sector	96.69	0.49	1.16	0.04	0	1.6
Unemployed - public sector	22.32	43.01	14.05	0.99	0.04	19.59
Employed - private sector	0.31	0.01	96.76	0.81	0	2.09
Unemployed - private sector	1.76	0.07	24.17	52.94	0.02	21.04
Unemployed - no sector	2.75	0	13.53	0.46	46.1	37.16
Not in the labor force	1.01	0.25	5.36	2.23	0.09	91.05

Black women

	Status next month					
	Employed - public sector	Unemployed - public sector	Employed - private sector	Unemployed - private sector	Unemployed - no sector	Not in the labor force
Employed - public sector	95.3	0.58	2.02	0.12	0	1.98
Unemployed - public sector	9.26	49.6	11.17	2.62	0	27.36
Employed - private sector	0.72	0.02	94.83	1.57	0.02	2.85
Unemployed - private sector	1.34	0.34	17.07	57.45	0.01	23.79
Unemployed - no sector	2.6	0	9.09	0.43	50.22	37.66
Not in the labor force	1.3	0.61	6.17	4.69	0.26	86.96

White men

	Status next month					
	Employed - public sector	Unemployed - public sector	Employed - private sector	Unemployed - private sector	Unemployed - no sector	Not in the labor force
Employed - public sector	97.81	0.29	1.16	0.03	0	0.71
Unemployed - public sector	14.95	53.01	13.98	2.2	0	15.86
Employed - private sector	0.19	0	97.81	1.06	0	0.94
Unemployed - private sector	0.75	0.08	28.31	57.74	0.01	13.11
Unemployed - no sector	1.05	0	14.21	0	50.53	34.21
Not in the labor force	0.84	0.32	7.43	4.26	0.08	87.07

Black men

	Status next month					
	Employed - public sector	Unemployed - public sector	Employed - private sector	Unemployed - private sector	Unemployed - no sector	Not in the labor force
Employed - public sector	95.86	0.56	2.02	0.12	0	1.44
Unemployed - public sector	8.79	55.86	13.09	3.52	0	18.75
Employed - private sector	0.51	0.02	94.91	2.09	0.01	2.46
Unemployed - private sector	1.02	0.29	22.02	57.85	0.04	18.77
Unemployed - no sector	0	0	10.74	0.83	52.07	36.36
Not in the labor force	1.08	0.43	7.03	5.32	0.23	85.91

2009 - 2013

White women

	Status next month					
	Employed - public sector	Unemployed - public sector	Employed - private sector	Unemployed - private sector	Unemployed - no sector	Not in the labor force
Employed - public sector	96.35	0.64	1.49	0.07	0	1.45
Unemployed - public sector	18.51	53.13	9.03	1.22	0	18.11
Employed - private sector	0.4	0.01	96.75	0.95	0	1.89
Unemployed - private sector	1.06	0.15	16.06	63.74	0.01	18.99
Unemployed - no sector	1.09	0	8.07	0.55	52.39	37.89
Not in the labor force	0.86	0.35	4.5	3.04	0.18	91.08

Black women

	Status next month					
	Employed - public sector	Unemployed - public sector	Employed - private sector	Unemployed - private sector	Unemployed - no sector	Not in the labor force
Employed - public sector	94.6	0.96	2.34	0.16	0.02	1.92
Unemployed - public sector	8.73	63.21	5.64	1.2	0	21.22
Employed - private sector	0.8	0.02	94.75	1.75	0.02	2.66
Unemployed - private sector	1.06	0.18	12	64.55	0	22.21
Unemployed - no sector	1.63	0	5.71	1.36	52.72	38.59
Not in the labor force	0.98	0.73	4.86	5.92	0.48	87.03

White men

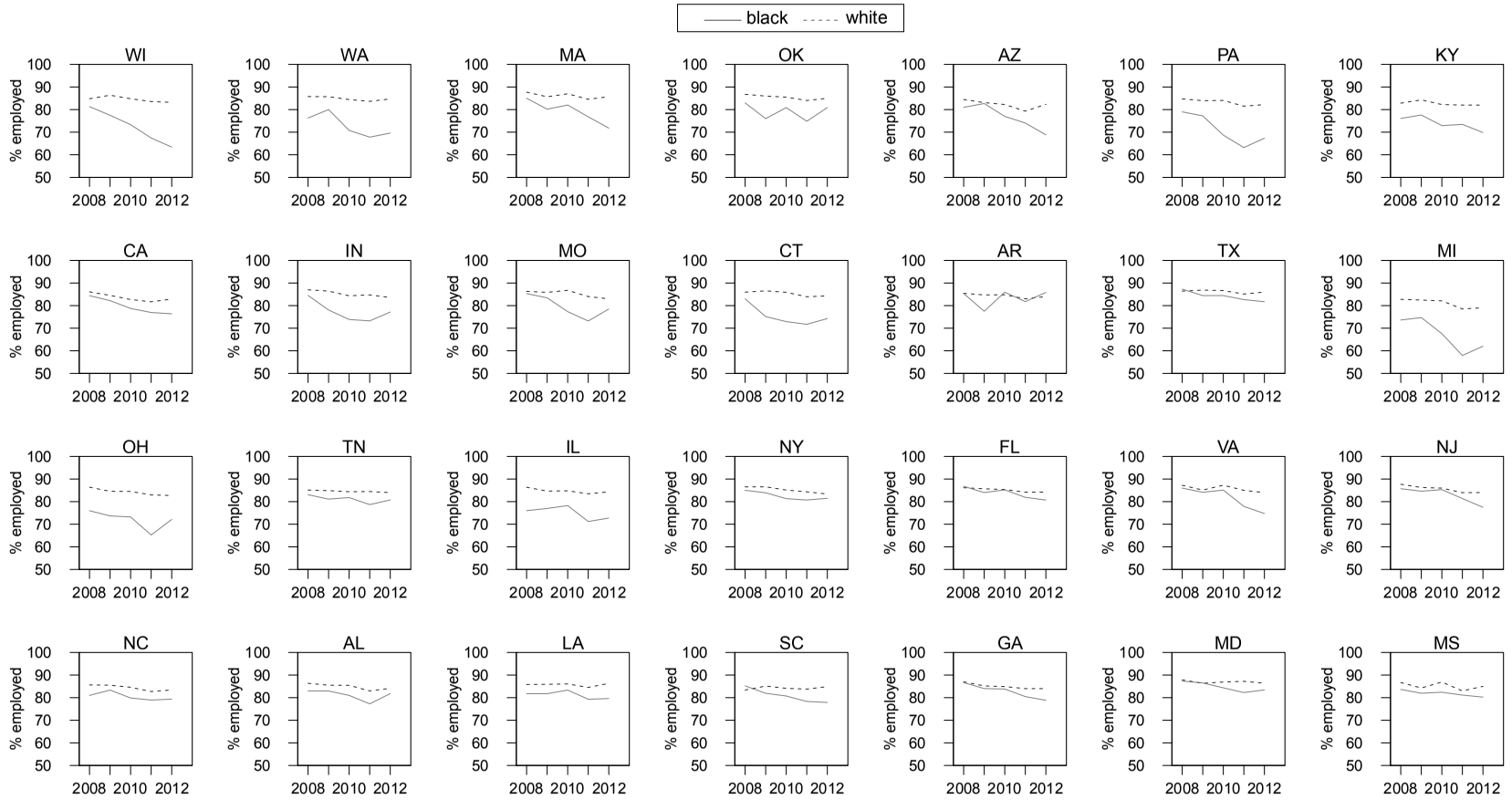
	Status next month					
	Employed - public sector	Unemployed - public sector	Employed - private sector	Unemployed - private sector	Unemployed - no sector	Not in the labor force
Employed - public sector	97.37	0.42	1.42	0.06	0	0.73
Unemployed - public sector	11.84	59.76	11.35	1.93	0	15.11
Employed - private sector	0.24	0.01	97.38	1.38	0	0.99
Unemployed - private sector	0.56	0.08	19.38	67.87	0.01	12.1
Unemployed - no sector	0.53	0	10.9	1.33	61.97	25.27
Not in the labor force	0.73	0.36	6.18	6.09	0.15	86.49

Black men

	Status next month					
	Employed - public sector	Unemployed - public sector	Employed - private sector	Unemployed - private sector	Unemployed - no sector	Not in the labor force
Employed - public sector	95.24	0.89	2.32	0.12	0.02	1.41
Unemployed - public sector	6.74	64.82	8.22	2.56	0	17.65
Employed - private sector	0.52	0.03	94.45	2.65	0.03	2.32
Unemployed - private sector	0.43	0.18	13.83	68.11	0.06	17.39
Unemployed - no sector	0.39	0	7.06	0.78	54.9	36.86
Not in the labor force	0.86	0.61	5.58	8.04	0.43	84.48

Appendix G

Appendix G. State and local government worker employment rates in the American Community Survey.



Note: Sample is restricted to those states that had at least 100 black state and local government workers in 2008.