


RECENT CHANGES IN THE CHARACTERISTICS OF UNEMPLOYED WORKERS

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ABSTRACT

We examine how gender, racial, and ethnic variation in unemployment and Unemployment Insurance (UI) receipt changed over time in the U.S. economy and how these changes are influenced by shifts in the occupational and industrial composition of employment. Using Current Population Survey (CPS) data, we find that, in the past 50 years, the unemployment rates for women, nonwhites, and Hispanics have been converging to those of the rest of the population. Between 1992 and 2007, women had the same unemployment rates as men; nonwhites still had higher unemployment rates than whites; and the rate for Hispanics was approaching that of non-Hispanics. Once we control for industry-occupation differences, women have higher unemployment and UI receipt rates than men, while Hispanics have similar unemployment rates but lower UI receipt rates than non-Hispanics. Nonwhites still have appreciably higher unemployment rates but the same UI receipt rates as whites.

JEL Codes: J11, J15, J16, J65.

Keywords: Unemployment, Unemployment Insurance, Gender, Race, Ethnicity.

1. Introduction

In the past 50 years, the demographic composition of the U.S. labor force has experienced dramatic changes. The labor force participation of women has increased substantially, and currently women are nearly as likely as men to participate in the labor market. As a result, the U.S. labor force is almost equally split between men and women. The shares of nonwhites in the U.S. labor force have also increased over time, and the share of Hispanics has exploded. In the face of these changes, significant research has focused on documenting the shifts in demographic composition of the labor force in the past 50 years (Fullerton and Toossi, 2001; Toossi, 2002; Lee and Mather, 2008).

During the same period, there were important differences in the unemployment experience of major demographic groups. Through the 1970s, women had higher unemployment rates than men, although this gap has most recently declined. It is also true that the unemployment rates of nonwhites and Hispanics have been appreciably higher than the rates for the remaining population. Nonwhites and Hispanics also faced higher unemployment durations and their labor force experience has been more sensitive to changes in the business cycle.

Dramatic shifts in the industrial and occupation structure of the U.S. economy have had substantial impacts on overall employment and unemployment patterns (e.g., Hipple, 1997, 1999; Groshen and Potter, 2003; Devereux, 2005; Mosisa and Hipple, 2006). The U.S. economy has transitioned from a system in which a large share of employment was in manufacturing to one in which services play a dominant role. In addition, the employment share of white collar occupations has been increasing steadily over time, partly as a result of the declining role of manufacturing.

The shifts in the industrial and occupational structure of the U.S. economy may have important implications for the overall unemployment patterns and for UI receipt. Historically, the service sector and white collar occupations have had lower unemployment rates than manufacturing and blue collar occupations, respectively, and they have been less volatile over the business cycle. The increasing share of services and white collar occupations may be, therefore, associated with declining and less volatile overall unemployment rates over the past 50 years. More generally, technology shifts are likely to be reflected directly in the distribution of employment by industry and occupation, so examining the effects of changes in employment composition provides a window into the possible impact of production innovation during this period. In addition, these changes may lead to a reduction in the proportions of workers receiving Unemployment Insurance (UI) benefits and to shifts in the composition of the UI population, as documented by previous work (Vroman, 1998; Fishman et al., 1999; Needels and Nicholson, 1999; Vroman, 2002; Lee, 2004; Nicholson and Needels, 2006; Burtless, 2009).

Patterns of labor force participation and changes over time for various demographic groups are well documented (Juhn and Potter, 2006). There is also an extensive literature that examines the determinants of changes in unemployment taking into account demographic factors (Hipple, 1997, 1999; Shimer, 1999; Sincavage, 2004; Duca and Campbell, 2007). Unemployment changes have also been examined in terms of relative shifts in duration and incidence of unemployment by various demographic groups (Abbring, van den Berg and van Ours, 2001; Abraham and Shimer, 2001; Lauerova and Terrell, 2007). Finally, there are many analyses that attempt to explain racial and gender differences in earnings and labor force participations as a function of shifts in supply and demand (Black and Juhn, 2000; Juhn, 2002, 2003; Bound and

Holzer, 2000).¹ However, to our knowledge, there are no existing studies considering the role of changing industrial and occupational structure in understanding demographic differences in unemployment and their changes over time.

This paper focuses on the role of the industrial and occupational shifts in the U.S. labor market in explaining recent patterns of unemployment and UI benefit receipt by gender, race, and ethnicity. The paper is organized as follows. First, we provide a brief overview of the historic shifts in the U.S. labor force and the unemployment rate by major demographic, industry, and occupation groups. We then turn to a more detailed analysis of changes in the U.S. labor force and unemployment for the period 1992-2007. We examine the extent to which differences and trends in unemployment over the last 15 years are attributable to the industrial and occupational composition of employment and shifts in composition over time. We then examine utilization rates of Unemployment Insurance for our demographic groups, decomposing changes over time by industry and occupation.

2. Historical Overview

One of the most important labor market changes in the past 50 years is the dramatic increase in the number of women in the labor force. Figure 1 illustrates how the proportions of women in the labor force and the unemployed population have changed over time. From the 1950s to the late 1980s, the proportion of women in the labor force increased steadily, from just over 30% to around 45%. During the 1990s and 2000s, the gender composition of the labor force flattened out, stabilizing at about 47%.

¹ Juhn, Murphy and Topel (2002) provide an insightful analysis of trends in prime-age male unemployment that ties together skill levels, demand shifts, and labor force participation.

Until the 1980s, women were overrepresented in the unemployed population. In the early 1950s, for example, women made up just over 30% of the labor force but 35-40% of the unemployed. By the early 1970s, both proportions had increased and women were nearly 40% of the labor force and 45-50% of the unemployed. But between 1970 and 1980, female labor force participation continued to rise while the female proportion of the unemployed did not exhibit any upward trends. By the early 1980s, the two proportions were no longer systematically different, although the proportion unemployed continued to vary with the business cycle.

The convergence in the unemployment rates of men and women is shown in Figure 2. Before 1980, men had consistently higher unemployment than women at all points during the economic cycle. After 1980, the unemployment rate for men and women had largely converged, except during recessionary periods, when male rate was higher, reflecting greater sensitivity to the business cycle. The increase in the female rate between the economic peak in 1980 and the 1984 trough was 3 percentage points, compared to an increase of more than 5 percentage points for males. Similar differentials are apparent for 1989-1992 (1.5 points versus 2.4 points) and 2000-2004 (1.1 points versus 2.1 points).

Another important change in the U.S. labor market is the gradual increase in the proportion of nonwhites in the labor force.² Figure 3 presents the proportion of nonwhites in the labor force and in the unemployed population between 1954 and 2007. In the 1950s, nonwhites accounted for 11% of the labor force, a proportion that did not change much through the mid-1970s. After 1975, there was a steady increase in the percentage of nonwhites until, by 2007, 18.5% of the labor force was nonwhite. We observe a similar pattern for the nonwhite proportion of the

² Nonwhites are mostly black, but include other races as well (Asians, American Indians, and those who identify with more than one race). Hispanics are discussed later; they are not classified as a racial group.

unemployed. As Figure 3 shows, between the early 1950s and the mid 1970s, the nonwhite proportion of the unemployed was around 20%. This proportion increased steadily to 2007, when 28% of the unemployed were nonwhites.

Although nonwhite labor force participants were overrepresented among the unemployed, changes over time in both the labor force and the unemployed populations correspond closely between 1954 and 1974. Between 1974 and 2007, however, the nonwhite proportion of the unemployed increased less rapidly than the percentage of nonwhites in the labor force. This is reflected in a decline in the unemployment gap between nonwhites and whites (Figure 4). However, nonwhites are still overrepresented in the unemployed population, so the nonwhite unemployment rate remains appreciably above that for the general population.

Perhaps the most striking change in the U.S. labor market has been the increase in the Hispanic labor force. As Figure 5 shows, in the early- to mid-1970s, Hispanics accounted for only 4.5% of the labor force. This figure had increased to 14% by 2007. The Hispanic proportion of the unemployed was higher than the Hispanic proportion of the labor force in all years between 1973 and 2007. In the 1980s and 1990s, the Hispanic proportion of the unemployed grew at a faster pace than the Hispanic proportion of the labor force, while it exhibited no upward trend in the 2000s, despite the continued growth of the Hispanic labor force. This pattern is reflected in Figure 6, which shows that Hispanic unemployment was higher than that for non-Hispanics, but that it has decreased over time. In the early 1980s recession, the unemployment gap for Hispanic workers relative to non-Hispanics was 4.9 percentage points, while at the trough of the early 1990s recession the ethnicity unemployment gap was marginally lower, at 4.3 points. In the early 2000s recession, the gap was appreciably lower at only 2 points.

There were also significant shifts in the industrial and occupational distribution of the U.S. labor force. Figure 7 presents the labor force proportions of four major industry groups: manufacturing, services, trade, and other.³ The most dramatic change in the industrial structure is the shift from manufacturing to services. Between 1976 and 2002, the share of the labor force in manufacturing declined from 23% to 12%, while the labor force share in services increased from 28% to 37%. Since the unemployment rate in the service industry is relatively low and less volatile than that of manufacturing (Figure 8), the shift of the U.S. economy towards services would tend to lower overall unemployment rates.

The shift toward white collar jobs has also been dramatic. As Figure 9 shows, there has been a dramatic increase in the white collar-high skill occupations,⁴ and a decline in the blue collar-low skill occupations.⁵ White collar-high skill occupations accounted for less than 18% of the labor force in the early 1980s and for 26% of the labor force in the early 2000s; blue collar-low skill occupations declined from 29% in the early 1980s to 24% in the early 2000s.

The industry and occupation shifts in the U.S. labor market may interact with the changes in the labor force demography. In the following sections, we examine in more detail the most recent changes in the unemployment experience by gender, race, and ethnicity and determine how these changes interacted with changes in the industrial and occupational distribution of the labor force.

3. Recent Changes in the Unemployment Experience, by Gender, Race, and Ethnicity

In this section, we consider unemployment rate patterns by gender, race, and ethnicity between 1992 and 2007 and examine the degree to which these are related to the changing

³ For clarity, we present only four industry categories. In subsequent sections, our analysis will include more detailed industry categories.

⁴ These include: CEOs and managers; professional specialty occupations; engineers and scientists; and health care occupations.

⁵ These include: farming, fishing, and forestry; construction workers; and laborers.

industrial and occupation composition of the labor force. For this analysis, we use the Current Population Survey (CPS) March supplement from 1992 to 2007. The CPS March supplement includes not only the basic CPS monthly data reports (demographic characteristics, industry and occupation affiliation, labor force, and employment status), but also income information for the respondents in the year prior to the survey. The latter information enables us to identify which individuals received Unemployment Insurance (UI) benefits in the year prior to the survey, which is critical in the subsequent section, where we analyze UI receipt.

In order to consider the role of industry and occupation in explaining unemployment, we focus on the subsample of the unemployed who were previously employed, the “experienced” labor force. Since the experienced unemployment rate omits the unemployed who recently entered the labor market, this measure is slightly lower than the overall unemployment rate.⁶ For each demographic comparison below, we briefly present evidence on the importance of the difference between the experienced and overall unemployment in the analysis.

3.1 Gender, Race, and Ethnicity Gaps in the Unemployment Rate

The leftmost graph in Figure 11 presents the unemployment rate between 1992 and 2007, by gender, based on the March CPS data. The unemployment for women is generally lower than that for men in the March data, in contrast to the 12-month moving average presented in Figure 2, which shows convergence. Further investigation showed that this was due to the fact that men are overrepresented in industries that experience slowdowns during winter, most notably

⁶ The overall unemployment rate is the ratio of the total number of unemployed to the total labor force, while the experienced unemployment rate is the ratio of the experienced unemployed to the experienced labor force (i.e., the sum of the employed plus the experienced unemployed).

construction.⁷ Despite the difference, the patterns of unemployment by gender are very similar for the March data (Figure 11) and the 12-month moving average of the CPS data (Figure 2). In both graphs, it is clear that unemployment for women is less volatile than that for men over the business cycle.

The unemployment gender gap may be influenced by differential labor market experience. If women are more likely than men to be new entrants in the labor market, this will tend to increase the overall female-to-male unemployment rate gap. The importance of this factor is easily explored by comparing the male-female differential in the unemployment rate with that for the experienced unemployment rate, the unemployment rate limited to workers with a job prior to becoming unemployed. The middle graph of Figure 11 presents the experienced unemployment rates for men and women. Although the experienced unemployment rate is lower than the overall unemployment rate for both groups by about 0.6 percentage points, the gender patterns over time change very little. As the rightmost graph in Figure 11 shows, the male-female gaps in the unemployment rate and the experienced unemployment rate are essentially the same over time. So, gender differences in labor market experience do not account for the unemployment gap or for changes in that gap between men and women at any point between 1992 and 2007.

Figure 12 presents a comparison of the overall and the experienced unemployment rate, by race in the March CPS. As discussed in the previous section, nonwhites had higher unemployment than whites between 1992 and 2007. However, the race gap declined from more than 4.5 percentage points in the early 1990s to about 3 percentage points in the 2000s. The rightmost graph in Figure 12 shows that the racial unemployment rate and experienced

⁷ Although the unemployment rate in construction is higher during winter months for both genders, the male rate is consistently higher and much more volatile than the female rate. This analysis is available upon request.

unemployment rate gaps were very similar. Both unemployment rate gaps displayed an overall declining trend, supportive of the view that racial unemployment experiences are converging. If this trend continues over the next two decades, it is possible that the difference in the unemployment rates between the two groups may be largely eliminated.

Unemployment differences between Hispanics and non-Hispanics based on the CPS March Supplement data correspond closely to those reported in Figure 6. Figure 13 shows that between 1992 and 2007, although Hispanics had higher unemployment rates than non-Hispanics, the gaps in both the unemployment and experienced unemployment rates declined over time. In the early 1990s, the experienced unemployment gap was over 3.5 percentage points, whereas it declined to less than 1.5 percentage points after 2004. Since 2000, the experienced unemployment gap was about a quarter of a percentage point higher than the overall unemployment gap. This suggests that new labor force entrants are less important among unemployed Hispanics than they are among other unemployed workers. Despite this difference, it is clear that limiting consideration to the experienced labor force makes little difference in comparing Hispanics and non-Hispanics.

Below, we consider if gender, race, and ethnicity differences in the employment distribution by industry and occupation may be partially responsible for the above patterns in the experienced unemployment rate. For example, women are less likely than men to be employed in industries or occupations with high unemployment rates and high sensitivity to the business cycle, so, the unemployment rate for women is reduced relative to that for men. By the same token, race and ethnic differences in the employment distribution by industry and occupation may be partially responsible for the observed unemployment rate gaps.

3.2 Gender, Race, and Ethnicity Differences in Industry and Occupation

Using the industry classifications in the March CPS, we define 17 industry categories. Table 1 presents these industry categories for the period 1992-2007, starting with the industry with the highest average unemployment rate (construction), to the sector with the lowest unemployment rate (health care services) during that period. The same table reports the employment distribution for each gender, race, and ethnicity category in the same period.

Table 1 shows that, between 1992 and 2007, the female employment distribution across industries was quite different from the male distribution. For example, only 1% of women were employed in construction relative to 12% of men. Women were also less likely to be employed in manufacturing (durables and non-durables), in the “other industries” category (includes agriculture, mining, fishing, and forestry), and in transportation, warehousing, and utilities. In contrast, a greater proportion of women were employed in health care services and in education and social services. Women were also more likely to be employed in the finance, real estate, and insurance sector and in the entertainment and recreation sector. These differences clearly show that women were less likely to be employed in high unemployment sectors relative to men.

In contrast, Table 1 shows that the nonwhite and white employment distributions across industries were only marginally different from one another. Notably, whites were more likely than nonwhites to be employed in construction but were equally likely to be employed in the remaining high-unemployment sectors. A slightly different story emerges for the employment distribution across industries for Hispanic and non-Hispanic workers. Hispanics were somewhat more likely to be employed in high unemployment sectors like construction, food services, and nondurable manufacturing, and less likely to be in low unemployment sectors like education and social services, and health care services.

Using the occupation classification in the March CPS, we define five blue collar and seven white collar occupation groups. Table 2 presents average unemployment by occupation group between 1992 and 2007, along with the employment distributions across occupations during the same period by gender, race, and ethnicity. Employment distributions across occupations for women and men were even more discrepant than the industrial distributions – 66% of women were employed in white collar occupations compared to 47% of men. Women were underrepresented relative to men in the three occupation categories with the highest unemployment rates – construction workers; farming, fishing, and forestry workers; and “other blue collar occupations” (includes laborers, extraction workers, material moving workers, and various other low-skill occupations). Women, on the other hand, were greatly overrepresented in the two occupation groups with the lowest unemployment rates – teachers and social workers; and health care occupations. Therefore, it is possible that the female unemployment rate is lower and less volatile than the male rate due to gender differences in the employment distribution across occupations during that period.

Table 2 also shows that the occupation distributions for nonwhites and whites were quite similar. Nonwhites were slightly less likely to be employed in white collar occupations (57% versus 60%). Nonwhites were underrepresented in low unemployment occupation groups, such as CEOs and managers, and sales occupations, but they were overrepresented in others, such as health care and office and administrative support. On the other hand, the occupational distribution of Hispanics was dramatically different from that of non-Hispanics. Hispanics were much less likely than non-Hispanics to be employed in white collar occupations, with only 41% of Hispanics employed in white collar occupations compared to 63% of non-Hispanics. In fact,

Hispanics were underrepresented in all white collar occupation categories relative to non-Hispanics, but were overrepresented in most blue collar jobs.

3.3 Decomposing the Experienced Unemployment Rate Gaps

In this section, we examine whether gender, race, or ethnic differences in the employment distribution in fact affect the observed unemployment rate gaps. To do so, we adjust the experienced unemployment rate of one group (e.g., women) to reflect the industry-occupation employment distribution of the other group (e.g., men). The difference between the adjusted rate and the observed rate for the other group provides a measure of the gap adjusted for differences in the employment distribution.

To formally delineate our analytical approach, we use the gender example. Let U_g be the number of experienced unemployed workers for gender g ($g = f, m$) and E_g be the number employed. The experienced unemployment rate for gender g is:

$$EUR_g = \frac{U_g}{U_g + E_g} \quad (1)$$

Let $U_{g,i}$ and $E_{g,i}$ be the number of unemployed and employed workers, respectively, in industry-occupation category i of gender g . Equation (1) can be rewritten as:

$$EUR_g = \sum_i \left(\frac{U_{g,i}}{U_{g,i} + E_{g,i}} \cdot \frac{U_{g,i} + E_{g,i}}{\sum_j (U_{g,j} + E_{g,j})} \right) \quad (2)$$

The first term inside the summation is the unemployment rate for gender g in industry-occupational category i , where jobs are classified into 204 industry-by-occupation categories (17 industries by 12 occupations). The second term is the share of the experienced labor force for

gender g , job category i , in the total experienced labor force for gender g . To determine the effect of differences in industry and occupation composition on the gender unemployment gap, we have to isolate the effect of the employment distribution. Following (2), write the female unemployment rate as,

$$EUR_F = \sum_i \left(\frac{U_{F,i}}{U_{F,i} + E_{F,i}} \cdot \frac{U_{F,i} + E_{F,i}}{\sum_j (U_{F,j} + E_{F,j})} \right) \quad (3)$$

and then adjust the female unemployment rate to the male employment distribution by applying the male industry weights to Equation (3):

$$EUR_F^{ADJ} = \sum_i \left(\frac{U_{F,i}}{U_{F,i} + E_{F,i}} \cdot \frac{U_{M,i} + E_{M,i}}{\sum_j (U_{M,j} + E_{M,j})} \right) \quad (4)$$

The difference between the adjusted female unemployment rate (EUR_F^{ADJ}) and the actual male rate (EUR_M) provides one measure of the unemployment gender gap after adjusting for gender differences in the employment distributions. We can also use the same approach to adjust the male unemployment rate to the female job distribution. Comparison of the adjusted male unemployment rate (EUR_M^{ADJ}) to the actual female rate (EUR_F) provides an alternative measure of the adjusted gender gap. Insofar as there is a positive association between male and female unemployment rates across industry-occupation cells, these estimates will be similar.⁸

⁸ The method requires modification for those industry-occupation cells that only contain men (for EUR_F^{ADJ}) or only contain women (EUR_M^{ADJ}). In such cases, we use the unemployment rate that is available. For example, if no women are in the relevant cell, we use the male unemployment rate where we would normally use the female rate. Given the relatively small weight that applies to such cells, the exact method used in dealing with them does not affect the results.

Figure 14 presents the output of this exercise for gender. The gap between EUR_F^{ADJ} (black dashed line) and EUR_M (grey solid line) was around 1% between 2000 and 2007, even during the trough of the 2002 recession. This indicates that if women had the same industry-occupation employment distribution as did men, the female unemployment rate would be substantially higher than the male rate between 1992 and 2007. Therefore, the observed female rate actually hides higher within-cell unemployment rates for women. This result also holds if we compare EUR_M^{ADJ} (grey dashed line) with EUR_F (black solid line). EUR_M^{ADJ} is below EUR_F for all years between 1992 and 2007; this suggests that women's unemployment rates are higher than men's rates once we adjust for the female industry-occupation distribution. Our conclusion from the two measures is therefore the same, that is, the overall female unemployment is reduced by the types of jobs women hold. If women held the same jobs as men, they would in fact have higher unemployment rates than men.

The lower volatility of female unemployment can also be explained in part by the fact that women were less likely to be employed in cyclical sectors or occupations. Figure 14 shows, for example, that, between 2000 and 2003, as the labor market responded to the recession, EUR_F increased by 1.2 percentage points, EUR_F^{ADJ} by 1.5 percentage points, and EUR_M by 2 percentage points. These numbers suggest that about a third of the volatility difference between EUR_F and EUR_M , is explained by gender differences in the employment distribution. The conclusion is very similar based on the volatility of EUR_M^{ADJ} .

This same analysis is also performed by race. Figure 15 shows that, adjusting the nonwhite unemployment rate for the white industry-occupation distribution does not explain the racial unemployment gap or the racial differences in volatility. Adjusting white unemployment to the

nonwhite distribution, similarly, has essentially no impact. Clearly, racial disparities in unemployment cannot be attributed to racial differences in the employment distribution across industry and occupation. The nonwhite-white unemployment gap reflects the fact that nonwhites face higher unemployment rates than whites within industry-occupation cells. We find in fact that, between 1992 and 2007, nonwhites had higher average unemployment rates than whites in 157 out of the 204 industry-occupation categories.

Figure 16 presents the actual and adjusted experienced unemployment rate by ethnicity. The adjusted Hispanic unemployment rate (black dashed line) is consistently 1 percentage point lower than the actual Hispanic rate (black solid line), indicating that ethnicity differences in the industry-occupation distribution account for about one percentage point of the unemployment gap by ethnicity. Comparing the adjusted Hispanic unemployment rate with the non-Hispanic rate (grey solid line), we find that, between 1992 and 1998, 40-60% of the ethnicity gap in unemployment was explained by differences in the employment distributions across industries and occupations between the two groups. After 1998, more than 70% of the gap was explained by such differences, and after the end of the early 2000s recession, the adjusted Hispanic unemployment rate was identical to the non-Hispanic rate. Therefore, although differences in the employment distributions cause Hispanic unemployment to be higher, this effect has not changed over time, even as the unemployment gap by ethnicity has declined.

Looking at the adjustment of the non-Hispanic unemployment rate for the Hispanic employment distribution provides a very similar conclusion, although the impact of the adjustment was slightly smaller at the beginning of the study period. After the recession of the

early 2000s, the remaining ethnicity gap in unemployment is explained by differences in employment by industry and occupation.

The results in this section show that differences in the types of jobs held by workers in key demographic groups play an important role in their overall unemployment rates. Women are disproportionately employed in low unemployment jobs, so their overall unemployment and its volatility are low. Since the early 1990s, the gap in unemployment between nonwhites and whites has declined but remains substantial. The remaining gap, however, cannot be attributed to racial disparities in the employment distribution. Our most notable finding is that not only has the unemployment rate for Hispanics been steadily converging to that for non-Hispanics, but controlling for differences in the industrial and occupational employment distribution eliminates most of the remaining difference. These remaining differences are largely a reflection of the greater concentration of Hispanics in blue collar occupations with high levels of unemployment.

4. Gender, Race, Ethnicity and the Unemployment Insurance Program

In this section, we examine disparities in the utilization of the Unemployment Insurance (UI) benefits by gender, race, and ethnicity.⁹ We also examine how differences in the industry and occupation distribution of employment for these groups affect differences in participation in the UI program. We use the CPS March Supplement, which includes information on income sources for the year prior to the survey, including UI benefits received, to calculate the number of UI recipients in the prior year. We then construct the UI receipt rate by dividing the total number of

⁹ The UI program is designed and implemented by states but must conform to federal guidelines. Federal legislation specifies that the program serve those who have lost their jobs through no fault of their own and are available for work. See Nicholson and Needels (2006) for a review of the UI program.

individuals receiving UI at some point in the prior year by an estimate of the labor force.¹⁰ Then, we use the same method as in the previous section to adjust the UI receipt rates for the industry-occupation employment, allowing us to determine the degree to which disparities in UI receipt by gender, race, and ethnicity can be attributed to differences in the employment distributions.

Figure 17 presents the UI receipt rate by gender over time. Comparing the actual UI receipt rate between women (black solid line) and men (grey solid line), it is clear that female labor force participants were generally less likely than their male counterparts to receive UI benefits. Looking at the two recessions, we see that 5.3% of female labor force participants in 1992 received UI benefits compared to 8.5% for men, and 4.2% of women in 2003 received UI benefits compared to 6% of men. Although the UI receipt rate was countercyclical for both genders, male receipt was also significantly more volatile. During the period of economic growth in the 1990s, the rate declined by 5.5 percentage points for men and to only 2.4 percentage points for women; in the early 2000s, the growth in the UI receipt rate was 3 points for men but only 1.2 points for women.

Not surprisingly, gender differences in the UI receipt rate correspond, at least roughly, to gender differences in unemployment described above. Therefore, part of the difference between male and female UI receipt rates may be a product of gender differences in the industry and occupation distribution. The black dashed line in Figure 17 shows that, if we adjust the female UI receipt rate to the male industry and occupation distributions, the adjusted female receipt rate is equal to or exceeds the actual male receipt rate. The lower observed receipt rate for women is

¹⁰ Labor force in the previous year is estimated as the number of individuals in the sample with earnings or with UI benefits in that year. Labor force participants who were never employed during the year are therefore omitted. Note also that the receipt rate constructed for our purposes differs from a measure of UI participation at a single point in time both because the time period for receipt covers a full year and because occupation and industry apply to March of the following year.

therefore more than explained by the types of jobs they hold. Adjusting the male UI receipt rate (grey dashed line) provides a similar conclusion, with the difference between male and female UI receipt rate largely eliminated.

The greater cyclical variability for men is also explained in part by industry and occupation. We see that, when we adjust the female UI receipt rate for job type, cyclical sensitivity increases, although the adjusted trough-to-peak variation is still lower for women than it is for men. Similarly, the adjusted male receipt rate has lower cyclical sensitivity than the actual male receipt rate. Either adjustment yields a pattern for which the peak-to-trough change is an approximate compromise between the male and female patterns, so, roughly speaking, about half the gender difference in the cyclical sensitivity of the UI receipt rate is explained by industry and occupation.

Since nonwhites had higher unemployment rates between 1992 and 2007 than whites, we might expect that they would also be more likely than whites to receive UI benefits. Figure 18 shows that the nonwhite and white UI receipt rates (solid black and solid grey lines, respectively) were very similar through the 1990s, but, beginning in 2000, the nonwhite rate was higher by about half a percentage point. This reflects two opposing factors. On one hand, nonwhites had consistently higher experienced unemployment rates during that period. Since UI is primarily available to the experienced labor force, we might expect higher unemployment among experienced nonwhites to lead to greater levels of UI receipt. On the other hand, however, even in the same industries and occupations, nonwhites suffer greater employment instability and lower earnings (e.g. Bound and Holzer, 2000; Holzer and Offner, 2002), making them less likely to meet states' minimum earnings or employment requirements (Holzer, 2000; Lee, 2004). They

may also be more likely to separate from jobs under circumstances that make them ineligible for benefits, that is, they may be more likely to quit their jobs or be dismissed for cause.

The dashed lines show that adjustments for industry and occupation have no important role in explaining UI benefit receipt differences. It is interesting to note, however, the shift in the nonwhite UI receipt rate relative to the white rate after 2000. This indicates that during and after the early 2000s recession, nonwhites became more likely to receive UI benefits than whites. This is consistent with the fact that nonwhites had higher unemployment rates than whites during that period. Since the racial unemployment rate gap after 2000 was about 2 percentage points and the UI receipt rate gap was appreciably less than 1 percentage point, it is still true that unemployed nonwhites were less likely to receive UI benefits than unemployed whites.

Figure 19 presents the UI receipt rates for Hispanic and non-Hispanic labor force participants between 1992 and 2007. As we might expect, the UI receipt rate for Hispanics was higher than that for non-Hispanics in the early 1990s, a period during which the Hispanic unemployment rate was also higher. However, the gap in the unemployment rate was approximately 4 percentage points (see Figure 16), much larger than the UI receipt rate gap, which was less than 1 percentage point. Following 2000, the UI receipt rate gap disappears and after 2006, non-Hispanics became slightly more likely to receive UI benefits than Hispanics.

Figure 19 shows that adjusting the Hispanic UI receipt to the non-Hispanic employment distribution implies that, until the late 1990s, the entire difference in UI receipt was explained by industry and occupation. By the end of our study period, we see that UI receipt rates for Hispanics adjusted for industry and occupation were appreciably below those for non-Hispanics. We also see that when we adjust the non-Hispanic UI receipt rates for the Hispanic employment

distribution, the non-Hispanic UI receipt rate is appreciably higher than those observed for Hispanics. Both results confirm the view that, within occupation-employment cells, Hispanic UI receipt rates were 1 to 1.5 percentage points lower than those of non-Hispanics. The lower take-up rate may indicate that Hispanic labor force participants are less likely to know that they are eligible to receive UI benefits if they become unemployed. Unemployed Hispanics may also be less likely to be eligible to receive UI benefits compared to unemployed non-Hispanics, as a result of work history or citizenship status.

5. Conclusion

Our analyses show that as the female proportion of the labor force has increased in the past 50 years, the female unemployment rate has converged with the male unemployment rate. On its surface, this might be taken as an indication that gender differences in employment and unemployment experiences are disappearing over time. In fact, for the period 1992-2007, we find that there are no differences by gender in prior labor market experience that impact relative unemployment by gender. However, we find that there remained substantial gender differences in the industry and occupation employment distribution, and that these differences had an important effect on the gender unemployment rate gap. When we adjust for such differences, the female unemployment rate is higher than the male unemployment rate.

Our analysis also indicates that women were appreciably less likely than men to receive UI benefits in the past two decades. However, this difference is explained by differences in industry-occupation distribution; in fact, women in the same kinds of jobs as men had the same or somewhat greater likelihood of receiving UI benefits. Our conclusion is that changes in the unemployment experience over time by gender do not fit a simple pattern; men and women

continue to be distinct populations with different experiences in the labor market and in the UI system.

Racial differences in unemployment are of longstanding importance. Even the most casual reference to unemployment and UI statistics reveals that nonwhite levels of unemployment remain substantially above those for whites. Despite this conclusion, our analyses provide some evidence of convergence. In the last decade, the nonwhite increment in unemployment rates has declined somewhat; although differences remain large, they are less dramatic than they were two decades ago. In addition, although nonwhites were more likely to experience unemployment than whites, the UI receipt rates between the two groups were not very different. This indicates that unemployed nonwhites were less likely than unemployed whites to receive UI benefits.

The story of Hispanics is more clearly one of convergence. In the face of growth in the number of Hispanics in the labor market, the unemployment gap between Hispanics and non-Hispanics has declined dramatically. When we adjust for differences in the industry-occupation distribution, we find that the Hispanic unemployment rate in the last several years is essentially the same as the non-Hispanic unemployment rate. We do find that Hispanics are somewhat less likely to receive UI benefits, although differences are fairly modest. Overall, the evidence suggests that, at least in terms of unemployment patterns, Hispanic labor force participants are becoming increasingly similar to non-Hispanic labor force participants.

Our results illustrate the importance of considering industry and occupation distribution in analyses of unemployment and UI receipt patterns by major demographic groups of the U.S. labor force. This is particularly true for analyses of differences in the unemployment experience between men and women and between Hispanics and non-Hispanics. In contrast, racial

differences in the types of jobs do not influence the overall differences in the unemployment experience for nonwhites and whites. In addition, our findings reemphasize the important demographic, industrial, and occupational shifts in the U.S. economy and shed more light on how these changes may affect overall unemployment and UI receipt patterns.

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Figure 1: Labor Force and Unemployed Proportions, Women

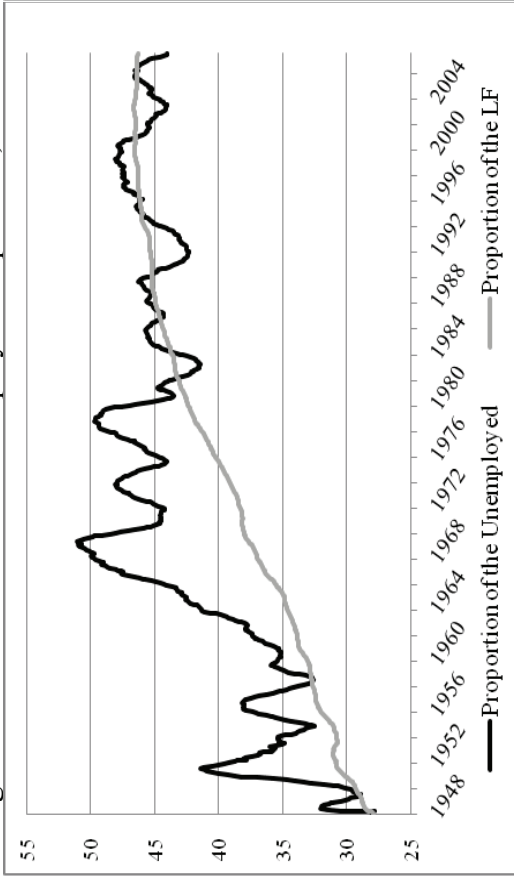
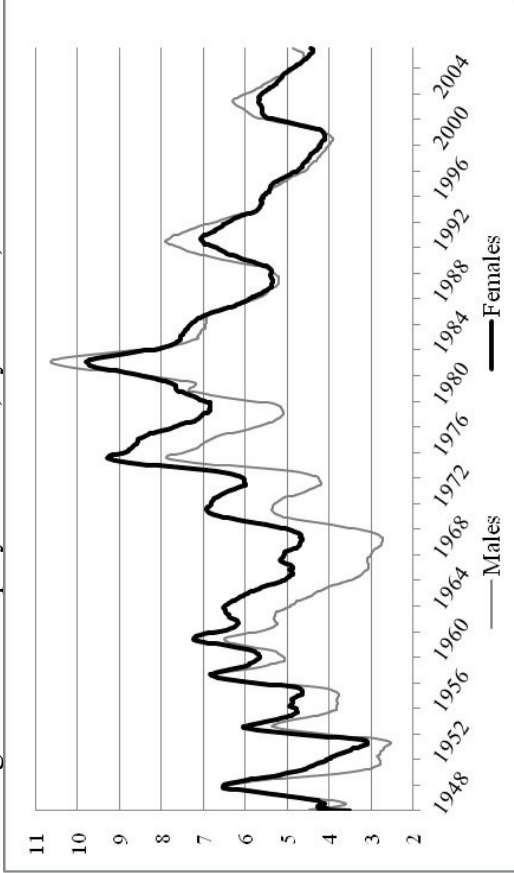


Figure 2: Unemployment Rate, by Gender, 1948-2007



Source: CPS monthly values, 1948-2007. Values represent 12-month centered moving averages.

Figure 3: Labor Force and Unemployed Proportions, Nonwhites

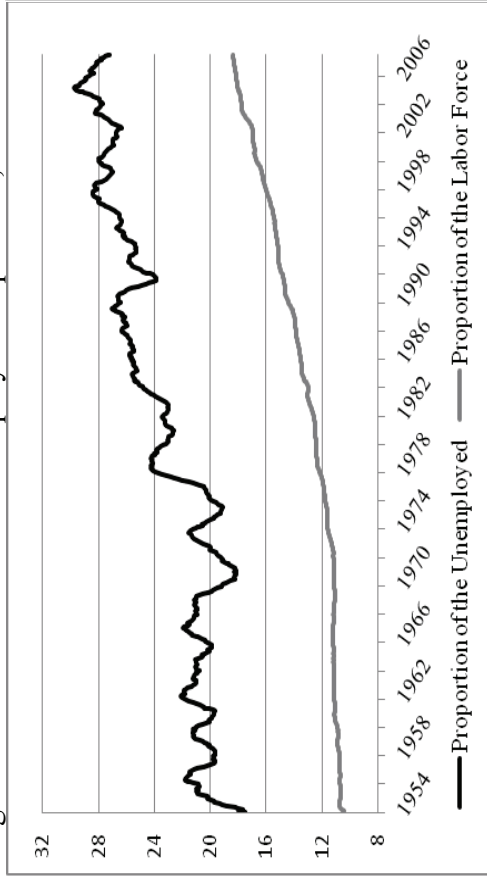
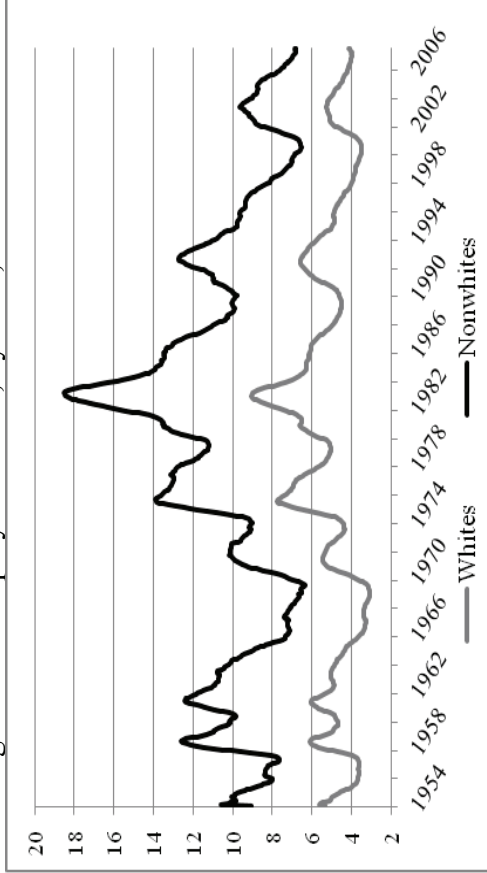


Figure 4: Unemployment Rate, by Race, 1948-2007



Source: CPS monthly values, 1948-2007. Values represent 12-month centered moving averages.

Figure 5: Labor Force and Unemployed Proportions, Hispanics

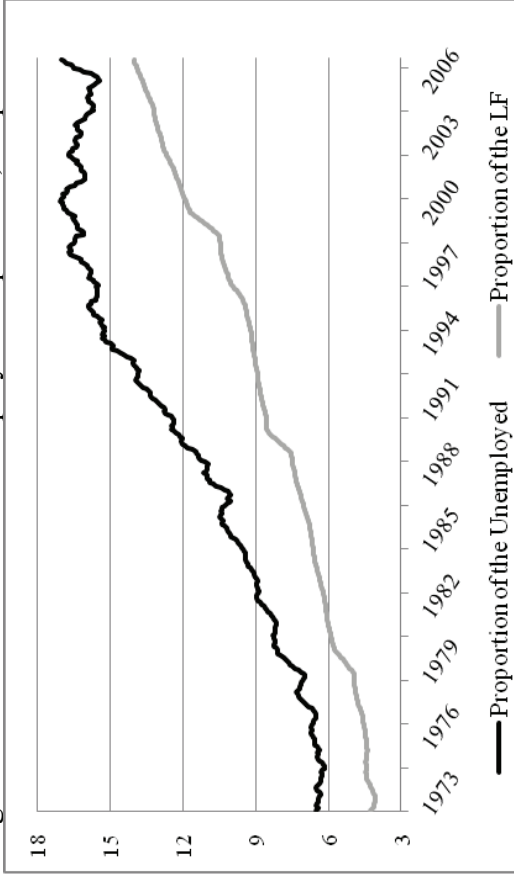
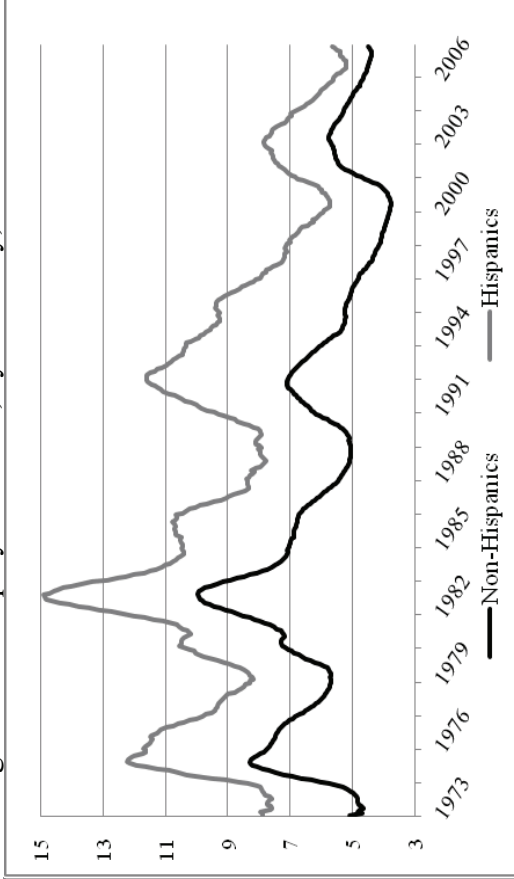
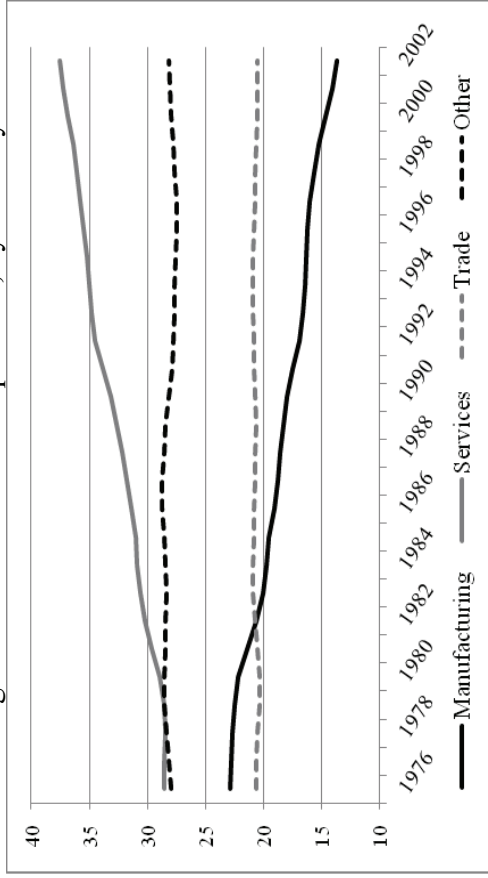


Figure 6: Unemployment Rate, by Ethnicity, 1948-2007



Source: CPS monthly values, 1948-2007. Values represent 12-month centered moving averages.

Figure 7: Labor Force Proportions, by Industry



Source: CPS values, 1976-2002. Values represent 3-year centered moving averages.

Figure 8: Unemployment Rate, by Industry, 1976-2002

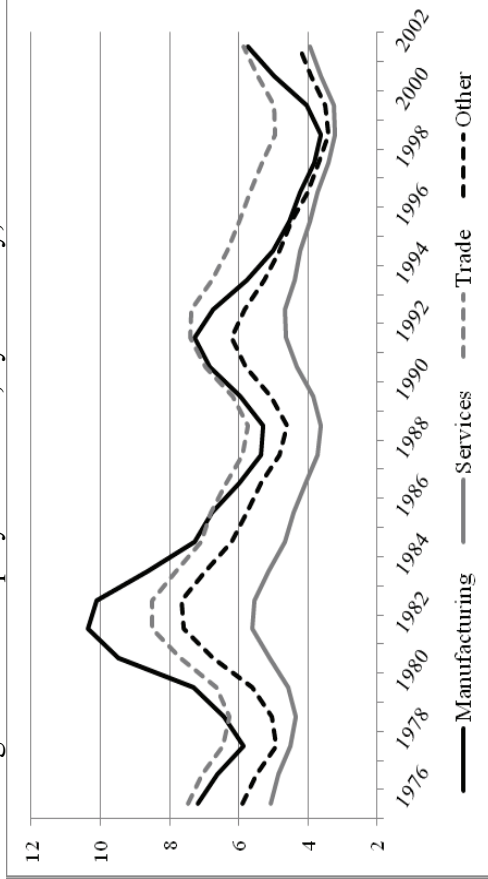


Figure 9: Labor Force Proportions, by Occupation Type

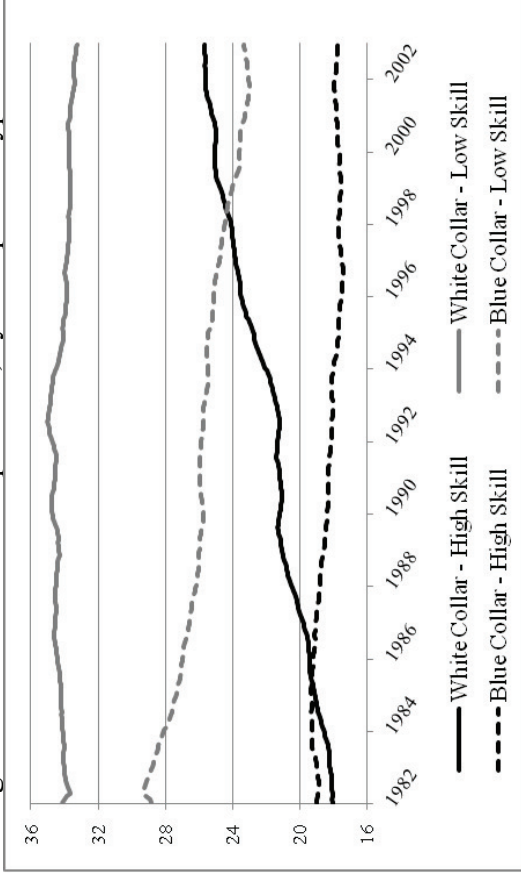
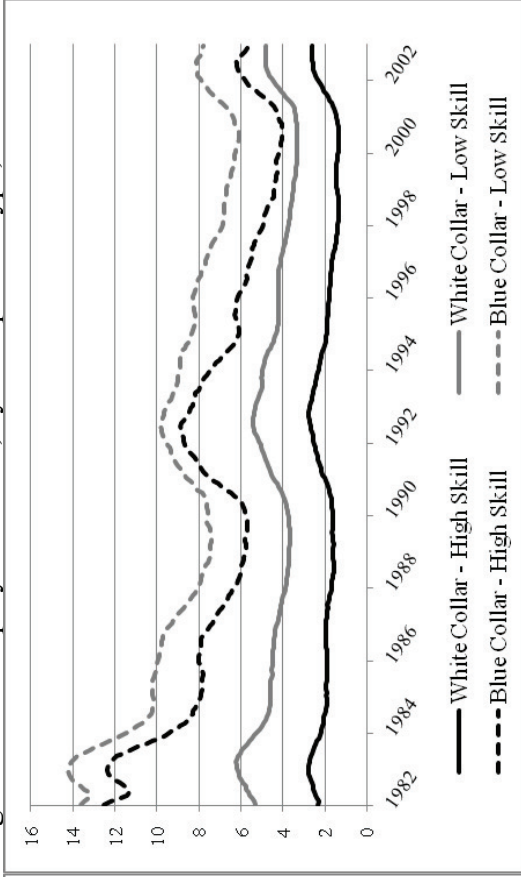
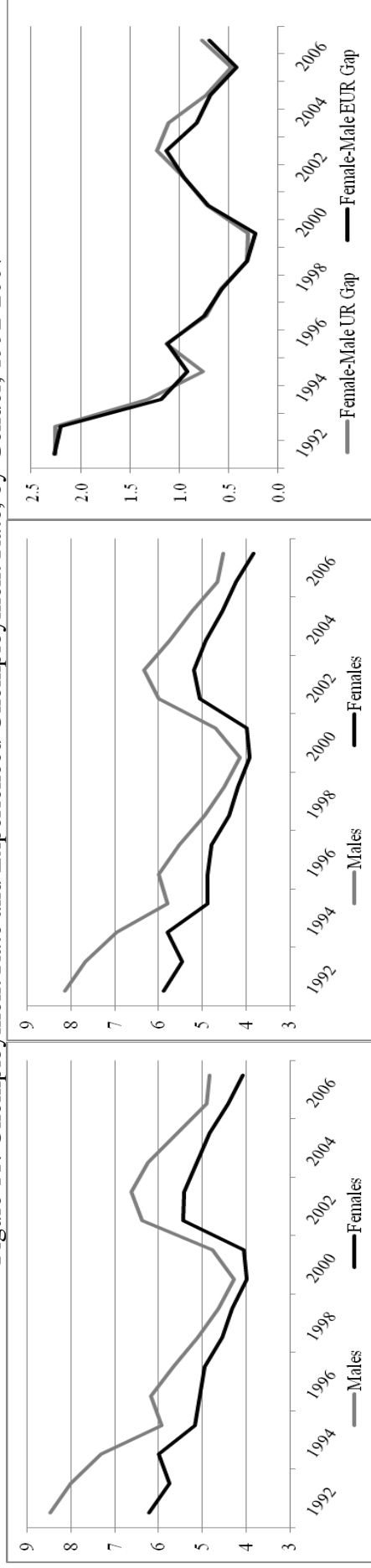


Figure 10: Unemployment Rate, by Occupation Type, 1982-2002



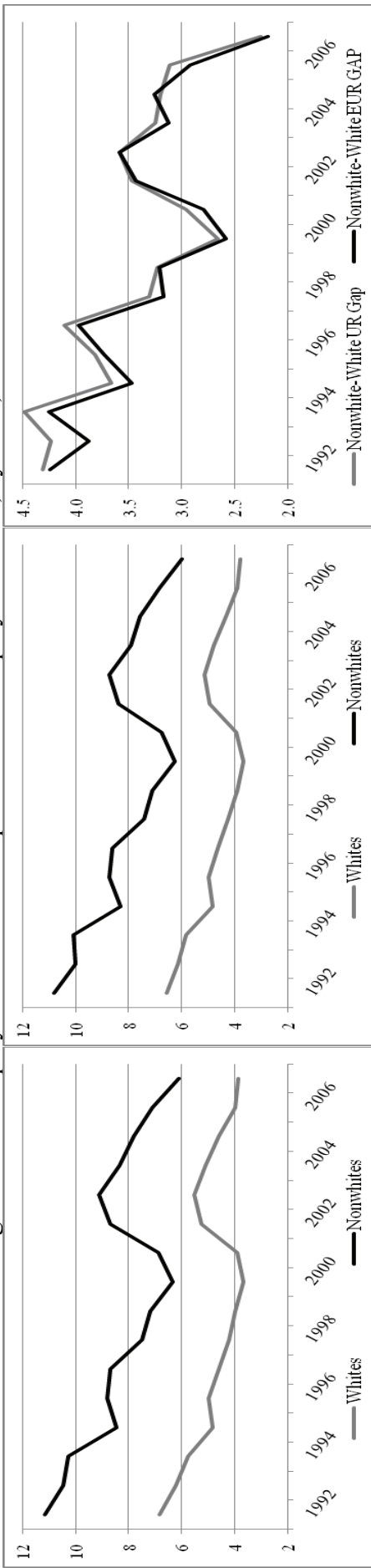
Source: CPS monthly values, 1982-2002. Values represent 12-month centered moving averages.

Figure 11: Unemployment Rate and Experienced Unemployment Rate, by Gender, 1992-2007



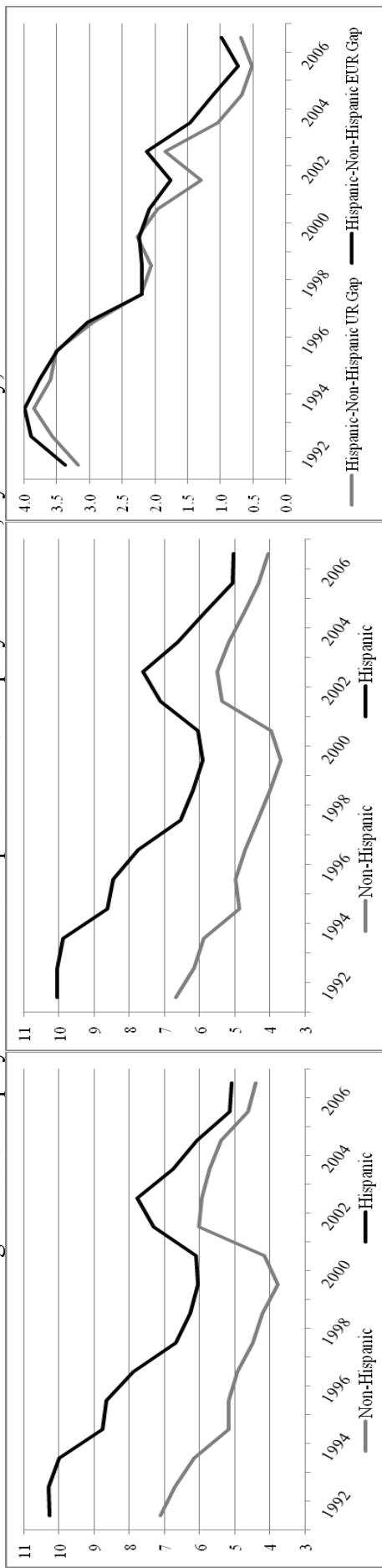
Source: CPS March Supplement, 1992-2007. Leftmost graph – unemployment rate, by gender; middle graph – experienced unemployment rate by gender; rightmost graph – male-female unemployment rate and experienced unemployment rate gaps.

Figure 12: Unemployment Rate and Experienced Unemployment Rate, by Race, 1992-2007



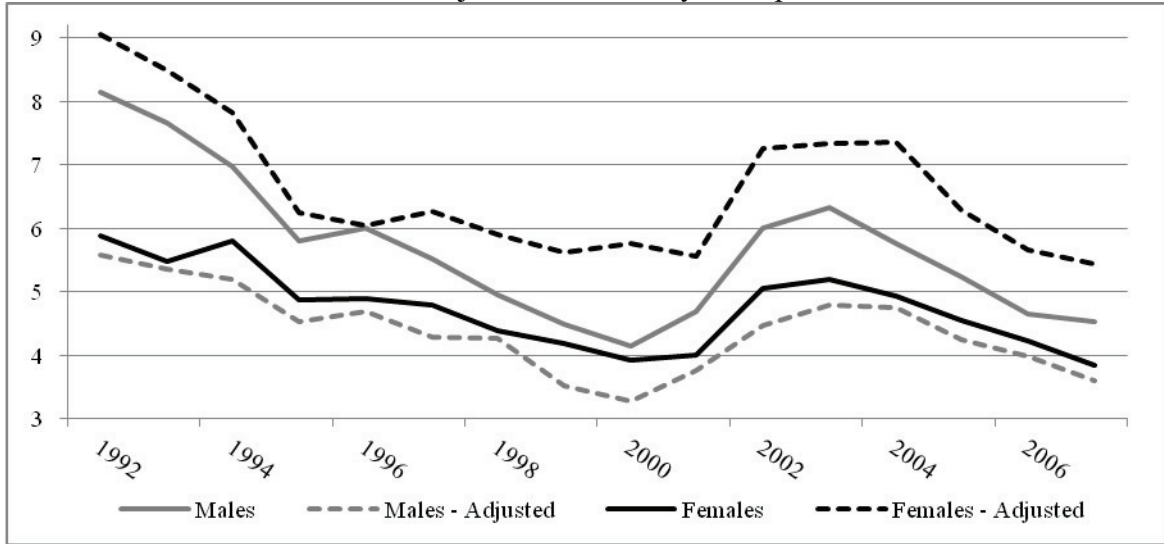
Source: CPS March Supplement, 1992-2007. Leftmost graph – unemployment rate, by race; middle graph – experienced unemployment rate by race; rightmost graph – white-nonwhite unemployment rate and experienced unemployment rate gaps.

Figure 13: Unemployment Rate and Experienced Unemployment Rate, by Ethnicity, 1992-2007



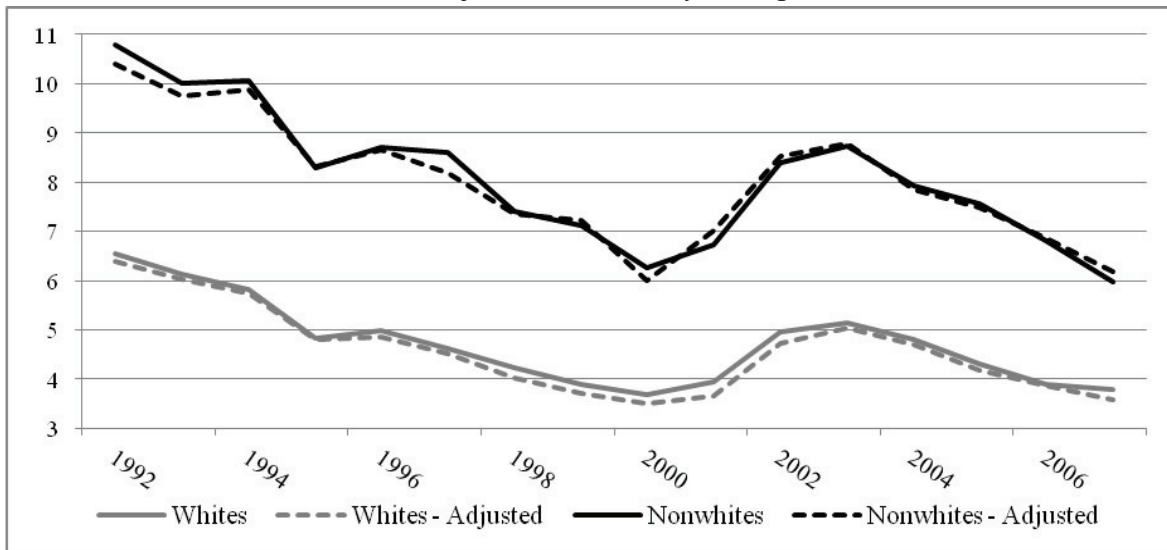
Source: CPS March Supplement, 1992-2007. Leftmost graph – unemployment rate, by ethnicity; middle graph – experienced unemployment rate by ethnicity; rightmost graph – non-Hispanic-Hispanic unemployment rate and experienced unemployment rate gaps.

Figure 14: Experienced Unemployment Rate, by Gender, Actual and Adjusted for Industry-Occupation



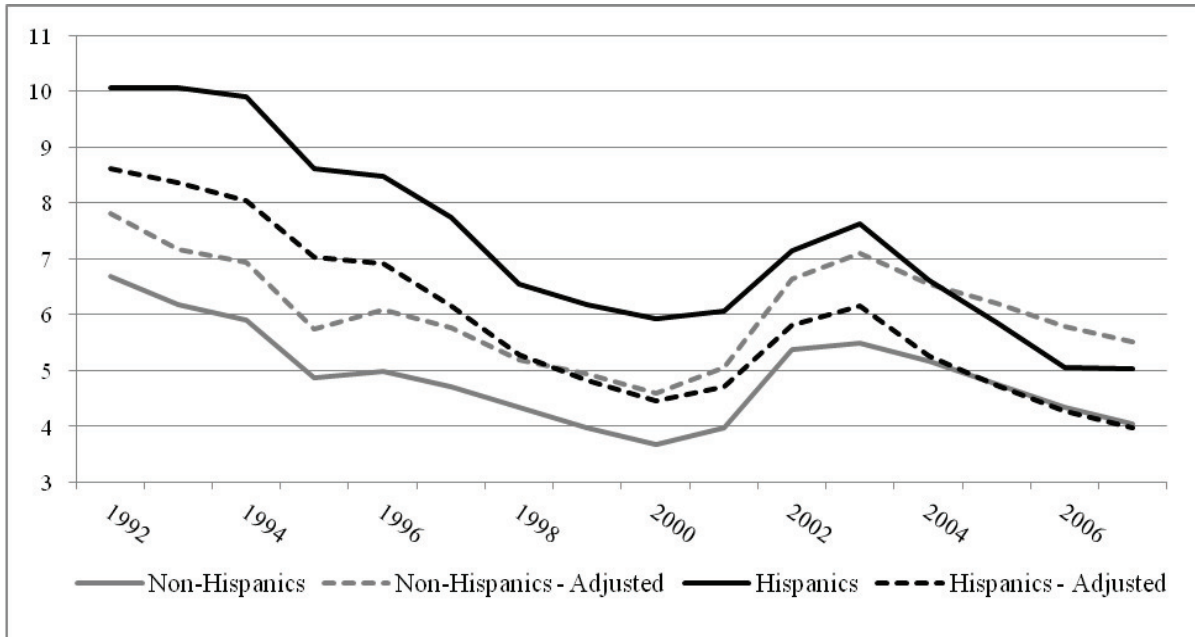
Source: CPS March Supplements, 1992-2007. Solid lines represent the actual experienced unemployment rates. Dashed lines represent the experienced unemployment rates adjusted for the industry-employment distribution of the comparison group.

Figure 15: Experienced Unemployment Rate, by Race, Actual and Adjusted for Industry-Occupation



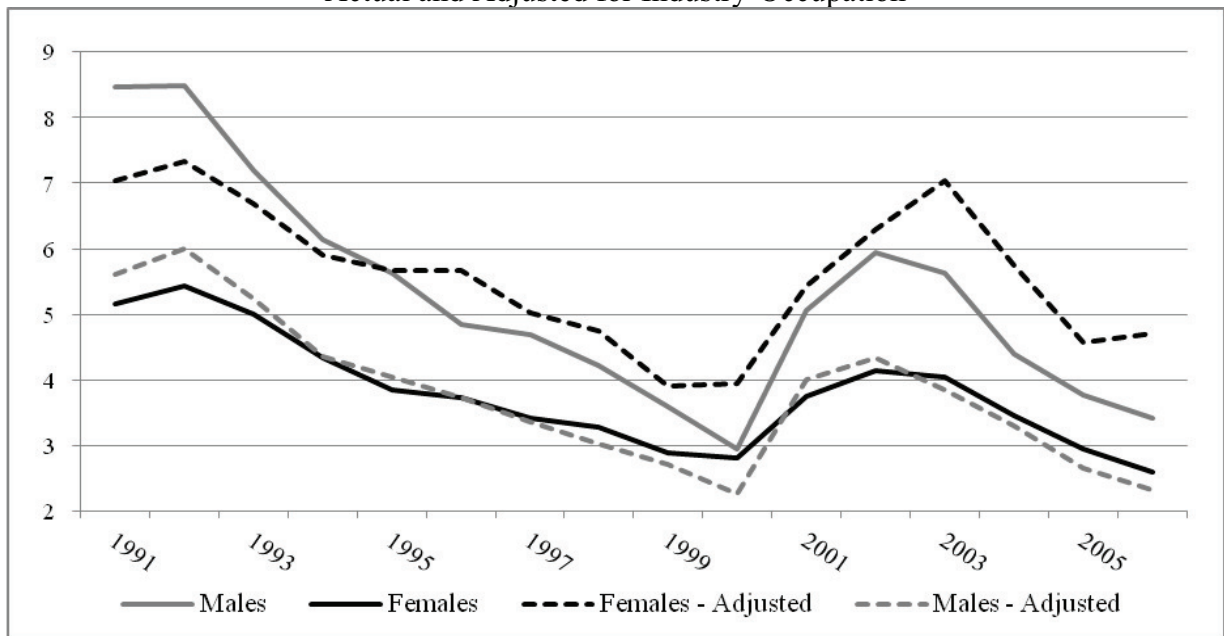
Source: CPS March Supplements, 1992-2007. Solid lines represent the actual experienced unemployment rates. Dashed lines represent the experienced unemployment rates adjusted for the industry-employment distribution of the comparison group.

Figure 16: Experienced Unemployment Rate, by Ethnicity, Actual and Adjusted for Industry-Occupation



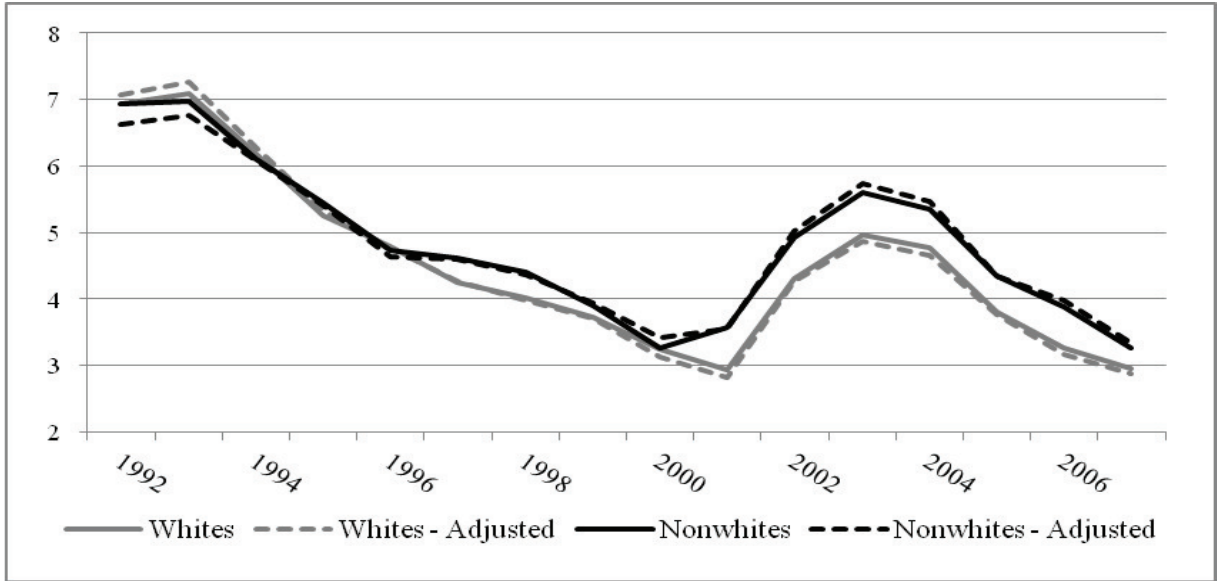
Source: CPS March Supplements, 1992-2007. Solid lines represent the actual experienced unemployment rates. Dashed lines represent the experienced unemployment rates adjusted for the industry-employment distribution of the comparison group.

Figure 17: Unemployment Insurance Receipt Rate, by Gender, Actual and Adjusted for Industry-Occupation



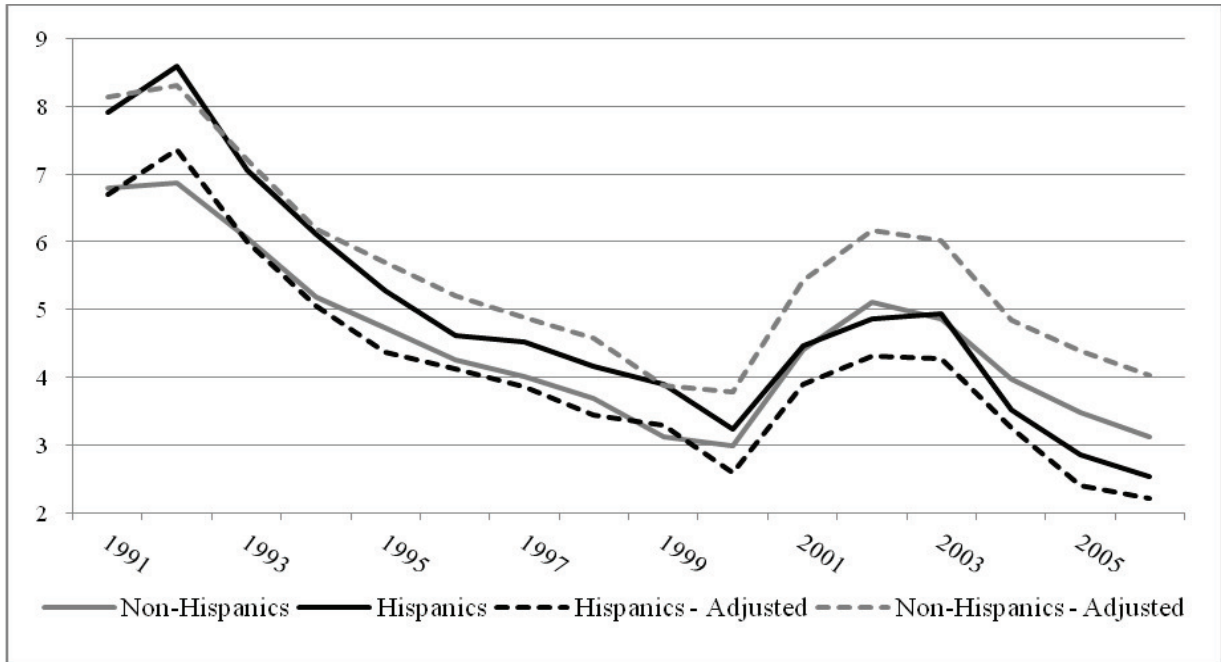
Source: CPS March Supplements, 1992-2007. Solid lines represent the actual experienced unemployment rates. Dashed lines represent the experienced unemployment rates adjusted for the industry-employment distribution of the comparison group.

Figure 18: Unemployment Insurance Receipt Rate, by Race, Actual and Adjusted for Industry-Occupation



Source: CPS March Supplements, 1992-2007. Solid lines represent the actual experienced unemployment rates. Dashed lines represent the experienced unemployment rates adjusted for the industry-employment distribution of the comparison group.

Figure 19 Unemployment Insurance Receipt Rate, by Ethnicity, Actual and Adjusted for Industry-Occupation



Source: CPS March Supplements, 1992-2007. Solid lines represent the actual experienced unemployment rates. Dashed lines represent the experienced unemployment rates adjusted for the industry-employment distribution of the comparison group.

Table 1: Employment Distribution by Gender, Race, and Ethnicity across Industries, Averages of March CPS Supplement Values, 1992-2007

	Experienced Unemployment Rate	Employment Distribution		Employment Distribution			Employment Distribution	
		Men	Women	Whites	Nonwhites	Non-Hispanics	Hispanics	
Construction	10.5%	12 %	1 %	7 %	4 %	7 %	9 %	
Food Services	7.4%	12 %	15 %	14 %	14 %	13 %	16 %	
Manufacturing – Non-Durables	6.3%	6 %	4 %	8 %	6 %	4 %	8 %	
Personal Services	6.2%	2 %	3 %	2 %	2 %	2 %	2 %	
Business Support Services	6.1%	8 %	7 %	8 %	9 %	8 %	9 %	
Repair and Maintenance	5.9%	2 %	3 %	3 %	3 %	2 %	4 %	
Other Industries	5.5%	6 %	2 %	5 %	3 %	4 %	5 %	
Manufacturing – Durables	5.3%	11 %	5 %	5 %	7 %	8 %	8 %	
Retail Trade	4.9%	5 %	6 %	6 %	5 %	6 %	5 %	
Information and Communications	4.5%	3 %	2 %	3 %	2 %	3 %	2 %	
Wholesale Trade	4.4%	5 %	2 %	4 %	2 %	4 %	4 %	
Transportation, Warehouse, and Utilities	4.2%	8 %	3 %	5 %	6 %	5 %	5 %	
Entertainment and Recreation Services	3.8%	2 %	6 %	3 %	5 %	4 %	3 %	
Finance, Insurance, and Real Estate	3.0%	4 %	5 %	5 %	4 %	5 %	3 %	
Education and Social Services	2.9%	5 %	12 %	8 %	8 %	9 %	6 %	
Public Administration	2.7%	3 %	4 %	3 %	5 %	4 %	2 %	
Health Care Services	2.5%	6 %	19 %	12 %	13 %	13 %	9 %	

Source: Authors' tabulations of the CPS March Supplements, 1992-2007. Industry categories are mutually exclusive.

Table 2: Employment Distribution by Gender, Race, and Ethnicity across Occupations, Averages of March CPS Supplement Values, 1992-2007

	Experienced Unemployment Rate	Employment Distribution		Employment Distribution			Employment Distribution	
		Men	Women	Whites	Nonwhites	Non-Hispanics	Hispanics	
Blue Collar Occupations	7.8%	53%	34%	40%	43%	37%	59%	
Construction Workers	11.4%	10%	0%	6%	4%	5%	9%	
Farming, Fishing, and Forestry	9.8%	3%	1%	2%	1%	2%	4%	
Other Blue Collar Occupations	7.8%	22%	8%	15%	18%	14%	23%	
Other Service-Related Occupations	7.0%	12%	15%	13%	17%	13%	19%	
Mechanics and Repairers	4.4%	6%	0%	4%	3%	4%	4%	
White Collar Occupations	3.5%	47%	66%	60%	57%	63%	41%	
Sales Occupations	5.4%	11%	13%	12%	10%	12%	9%	
Office and Administrative Support	4.5%	6%	25%	14%	16%	15%	14%	
Engineers and Scientists	2.9%	7%	3%	5%	5%	5%	2%	
Professional Specialty Occupations	2.7%	4%	5%	4%	4%	5%	2%	
Health Care Occupations	2.5%	2%	11%	6%	8%	7%	4%	
CEOs and Managers	2.4%	13%	11%	13%	9%	13%	7%	
Teachers and Social Workers	1.6%	3%	8%	6%	5%	6%	3%	

Source: Authors' tabulations of the CPS March Supplements, 1992-2007. Occupation categories are mutually exclusive.