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A LONG-RUN VIEW

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ABSTRACT

This paper documents and explores black-white differences in U.S. women's labor force participation, occupations, and wages from 1940 to 2014. It draws on closely related research on selection into the labor force, discrimination, and pre-labor market characteristics, such as test scores, that are strongly associated with subsequent labor market outcomes. Both black and white women significantly increased their labor force participation in this period, with white women catching up to black women by 1990. Black-white differences in occupational and wage distributions were large circa 1940. They narrowed significantly as black women's relative outcomes improved. Following a period of rapid convergence, the racial wage gap for women widened after 1980 in census data. Differences in human capital are an empirically important underpinning of the black-white wage gap throughout the period studied.

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1. Introduction

Racial differences in labor market outcomes are long-standing and important determinants of disparities in wellbeing. Employment and earnings affect access to goods and services today as well as the accumulation of wealth over one's lifecycle. Moreover, they may affect outcomes in subsequent generations through channels that influence children's health and their development of human capital. Addressing persistent racial disparities in most aspects of material wellbeing requires an understanding of the origins and perpetuation of racial differences in income. This has been an active area of research in economics and other social sciences for several decades, yet there is still much to learn.

This chapter focuses on the interaction of race and gender in labor markets, with most of the emphasis on long-run "black-white" differences in outcomes for women in the United States. After reviewing some conceptual and data-quality issues, we show how levels and trends in black-white differences have varied over time. From the earliest post-Civil War censuses, it is clear that African American women participated in the labor market at much higher rates than white women, though both groups participated at low rates compared to women today. The black-white gap in participation narrowed rapidly around the mid-twentieth century, as both black and white women increased their participation rates, and by 1990 the gap had all but disappeared. At roughly the same time, from 1940 to 1980, an initially large racial gap in women's wages narrowed sharply (conditional on working), as black women gained ground relative to white women. But since then, the wage gap has widened.

In long-run context, the evolution of black women's labor market outcomes is not a simple combination of the stories for white women and black men, even though there are many common themes (Jones 1985, Greenman and Xie 2008). Like white women, black women have been affected by social norms about women's work, legal changes in women's rights, technological advances in fertility control, and overt gender discrimination in many lines of work (Goldin 1990). But unlike white women, black women supplied labor to the market at a relatively high rate even in the late nineteenth century, reflecting both their relative poverty and perhaps a distinct legacy of slavery (Goldin 1977, Boustan and Collins 2014). Also, black women were concentrated in the South and lagged decades behind white women in gaining a significant foothold in clerical and professional work, in part due to racial discrimination in education and hiring. Like black men, black women have been affected by racial discrimination in civil rights, education, and opportunities for employment and advancement. But unlike black men (or white women), black women at the middle

of the twentieth-century most often found employment in the homes of others, typically those of white families.¹ Their shift into more formal employment coincided with a significant increase in average earnings, but distinct employment patterns persisted. At the end of the twentieth century, black women were more likely than black men (or white women) to work in public-sector civilian jobs, and they were still over-represented in less-skilled service occupations.

For brevity, this chapter's empirical perspective is specific to two racial groups in a particular country and timeframe, but the discussion's major themes are broadly relevant to studying group disparities in other contexts. First, the history of gender and racial discrimination casts a long shadow in labor markets. Even when state-sanctioned discrimination ends, the effects of past discrimination may persist, and less overt discrimination may continue. A second major theme is that selection into the labor force can complicate the interpretation of workers' mean or median wages. That is, wages observed among those who are employed at a given point in time may be a misleading guide to group differences in potential wages or labor market opportunities (Neal 2004); moreover, because selection patterns can vary over time, trends in observed wages might be an unreliable indicator of how labor market opportunities are truly changing. Third, the effects of labor market discrimination on group disparities in labor market outcomes are complex in theory and difficult to measure in practice (Charles and Guryan 2011, Lang and Lehmann 2012). Fourth, differences in the accumulation of skills prior to entering the workforce are important to understanding group differences in labor market outcomes (Neal and Johnson 1996). This, of course, begs the question of when and why gaps in skills open up and how policy may effectively address the issue (Fryer 2011).

2. Basic definitions and data issues

Studies of racial disparities in economic outcomes typically rely on key variables observed in census or survey data: race, labor force participation, income, education, and experience. All pose challenges to measurement and interpretation, starting with race itself. Throughout this chapter, we proceed as though race categories are simple dichotomous variables, which is how they appear in most modern datasets. But race has always been more complex than such classifications allow (Bodenhorn 2015, Mill and Stein 2016). For instance, prior to 1930, federal census enumerators were often instructed to categorize mixed race individuals as "mulatto," and such individuals fared better in labor markets on average than those categorized as black. Starting in 1930, however, official

¹ In 1940, about 57 percent of black women in the labor force worked as private household workers compared to about 3 percent of black men (IPUMS 1940 1-percent sample, Ruggles et al. 2015).

instructions to enumerators stated that, “A person of mixed white and Negro blood should be returned as Negro, no matter how small a percentage of Negro blood” (Ruggles et al. 2015), a definition that was explicit until at least 1950. The census has also enumerated separate “race or color” categories for American Indian, Chinese, and Japanese respondents since the nineteenth century.

Starting in 1960, census forms were distributed to households by mail, and so “race or color” from that point onward is typically self-reported rather than ascertained by enumerators. In 2000, respondents were given a wider range of “boxes” to choose to from when self-reporting their race on census and American Community Survey (ACS) forms, including mixed race categories. Although this innovation has little influence on the summary statistics that we present below, it does open the door for more refined studies of those who report mixed racial heritage. This is a small segment of the population, at about 3 percent in 2010 according to Jones and Bullock (2012), but with sharply rising frequency among younger cohorts (Currie and Schwandt 2016). In addition, Charles and Guryan (2011) show that a nontrivial number of people select different or more complex race categories depending on the options allowed by the Current Population Survey (CPS), which invites deeper consideration of how people self-identify race and how social scientists interpret race variables.

The first outcome we discuss is labor force participation. In modern datasets, the essence of labor force participation is that a “participant” was working, seeking employment, or temporarily absent from a job in the week prior to the survey. Counting labor force participation for women, especially in settings where many women worked in the informal sector (e.g., taking in lodgers or laundry or working on the family farm), is not always straightforward and is subject to error that could vary by race (Goldin 1990, Boustan and Collins 2014).² With the passage of time, as most women moved into formal employment arrangements, the standard definitions of labor force participation became a more reliable characterization of women’s supply of labor to the market. In any case, a major theme in studies of women’s labor market outcomes concerns their decision to participate in the first place, and racial differences in participation can complicate comparisons of other outcomes, as we discuss below.

Labor market earnings are, of course, a key outcome variable and at the center of much of this chapter’s discussion. Microdata from the 1940 census manuscripts are the earliest that contain nationally representative information on income (Ruggles et al. 2015), but the census only collected

² The IPUMS documentation (Ruggles et al. 2015) includes helpful guidance to changing definitions of labor force participation and methods of enumeration.

information on wage and salary income in the previous year. This is an important shortcoming because a substantial share of the labor force was at least partly self-employed and because some jobs in which black workers were historically overrepresented (e.g., agricultural labor or household service) entailed a nontrivial amount of income paid “in kind.” Later censuses expanded their collection of information to include income from non-wage sources, such as net income from business or farming, but in-kind income is generally not included. The issue of in-kind payment is less significant over time as employment in agriculture and household service declines, but other non-wage components of compensation, such as health and retirement benefits, are still important (Pierce 2010). In addition, census and survey-based measures of income are typically nominal measures, without consideration of differences in local price levels. Price differences can matter for making black-white comparisons over time because the populations have been distributed differently over regions and urban centers (McHenry and McInerney 2014).

Human capital—productive capacity enhanced through investments in education, experience, training, and health—is an important determinant of labor market outcomes. Educational attainment is the most readily available and commonly used measure of individual-level human capital in studies of labor market outcomes. Highest grade of completion was first collected by the census in 1940, and it has been collected in subsequent surveys, such as the CPS, the National Longitudinal Survey of Youth (NLSY), and many more. The black-white gap in average educational attainment circa 1940 was large, at least three grades if the data are taken at face value (Collins and Margo 2006). However, important caveats accompany the use and interpretation of this variable. Many workers in the United States circa mid-century had attended ungraded schools as children, meaning that ascertaining “highest grade” is subject to considerable error, which in turn has implications for observed trends in black-white gaps in human capital over the twentieth century (Margo 1986). A separate issue concerns widespread discrimination in the provision of school resources in the strictly segregated southern schooling system (Margo 1990; Donohue, Heckman, and Todd 2002; Carruthers and Wanamaker 2016). This was not only a matter of the number of schools or their physical quality; in addition, black and white schools convened classes for different lengths of time during the year. Another concern is that educational attainment within cohorts tends to increase over time because people may inflate their self-reported educational attainment with age or because less-educated people tend to have higher mortality, leaving better-educated survivors in a given cohort.

All of these factors complicate the interpretation of a “grade” or “year” of education, which social scientists frequently use to “explain” or “adjust” group disparities in labor market outcomes, as we will below. Even if educational attainment were perfectly measured, it would still be a rough

measure of skill or ability. Some datasets, such as the NLSY, advance beyond “years of education” by including scores from aptitude tests typically administered to survey respondents as teenagers, such as the Armed Services Qualification Test (AFQT) scores.³ As we discuss below, such information is valuable in the context of this chapter because for a given level of educational attainment, black and white workers have different AFQT test scores on average (O’Neill 1990, Neal and Johnson 1996). Finally, although measures of educational attainment and general cognitive skills are predictive of labor market outcomes, variation in specific training, non-cognitive skills and habits, labor force attachment, and ultimately productivity are also relevant and could vary across race-gender groups in ways that educational attainment and test scores do not fully capture. Such variables are rarely observed in large, representative samples. This underscores how careful researchers must be in interpreting results from empirical strategies that seek to compare the outcomes of workers who are observationally similar except for their race or gender.

Lastly, accumulated labor market experience tends to improve a worker’s skill, productivity, and pay. Unfortunately, experience is not measured in census or CPS data. Scholars sometimes use an approximation of potential experience based on age and years of education, though this is likely to be an especially error prone measure for women, who historically have moved in and out of the labor force more frequently over the lifecycle than men (e.g., due to childbearing). Longitudinal datasets such as the NLSY provide more detailed individual-level information on spells in and out of the labor force, and administrative data such as social security earnings records might also allow more accurate accounts of women’s lifecycle employment and earnings. For most of the twentieth century, cohorts of black women participated in the labor market at higher rates than white women and, therefore, accumulated more experience. Antecol and Bedard (2002), however, show that by 1994 white women in the NLSY79 cohort (born 1957-64) had accumulated more experience than black women.

3. Labor force participation, occupations, and unemployment

To fix ideas for subsequent discussion and analysis, Figures 1A and 1B show labor force participation and broad occupational categories for black and white women from 1940 to 2014, drawing on data from the federal Census of Population and the American Community Survey (Ruggles et al. 2015). The baseline samples consist of non-Hispanic white and black women, ages

³ AFQT scores are not specific to those who are entering the military; the exam was given to the survey participants. Darity and Mason (1998) offer several criticisms of the AFQT and its interpretation. Neal and Johnson (1996, pp. 878-879) discuss whether the AFQT is biased.

25 to 54, to focus attention on prime years in the lifecycle for working.⁴ Figures 1A and 1B include all women, both in and out of the labor force, to show how the population was distributed over occupational and non-occupational categories.⁵ We focus on comparisons of black and white women in this section rather than direct comparisons with men because gender differences in participation rates and occupations were vastly different over much of the period. Later in the chapter we do offer wage comparisons with men.

The top portion of each bar in Figures 1A and 1B represents the share of women who are not in the labor force. The first clear impression from the graphs is that both white and black women greatly increased their labor force participation over the twentieth century. Indeed, this is one of the most important changes in American economic history, with profound implications for women's role in the economy and society.

The second clear impression is that prior to World War II and through most of the twentieth century, black women were far more likely than white women to be in the labor force. In part, the relatively low level of white women's labor force participation reflects strong social norms against married women's work outside the home, the force of which varied with the husband's level of income, the characteristics of jobs available to women, and race-specific history with respect to women's work outside the home (Goldin 1990, Boustan and Collins 2014). In 1940, the participation gap was nearly 20 percentage points, at approximately 45 percent for black women compared to 26 percent for white women (ages 25-54). Boustan and Collins (2014) show that women's observable characteristics, including their husband's occupation (if married), are relevant to their participation but cannot fully account for the sizable black-white gap in participation between 1880 and 1980.

At the same time, black women were highly concentrated in household and non-household service occupations. They were approximately six times more likely to work in such jobs than white women in 1940 (31 compared to 5 percent), whereas white women were about ten times more likely than black women to work in clerical and sales occupations (9 compared to less than 1 percent). Again, only part of the racial differences in such occupations can be attributed to differences in educational attainment and location (Cunningham and Zalokar 1992, Boustan and Collins 2014).

⁴ Space constraints do not allow an analysis of Hispanic, Asian, or Native American women in this chapter, though the data and methods we employ could be used to study each group.

⁵ Unemployed women in the census typically report their last occupation. Women who are in the labor force but do not report an occupation are omitted from Figures 1A and 1B.

Between 1940 and 1960, white women's labor force participation rate increased by about 13 percentage points, but still the racial gap remained large. White women nearly doubled their concentration in the clerical and sales category in this timeframe. These jobs were seen as relatively clean and safe, which mitigated the effects of social norms against married women's work (Goldin 1990). Only a small share of black women worked in clerical or sales jobs at mid-century. Surveys of firms taken by the Women's Bureau in 1940 found widespread discrimination against black women in hiring for clerical jobs (Goldin 1990, p. 147).

Black women's inroads in clerical employment occurred after 1960, coinciding with the Civil Rights Act of 1964 and a substantial increase in black women's high school graduation rate (see Cunningham and Zalokar 1992, King 1993, Sundstrom 2000 for more detailed analyses).⁶ Declining discrimination and rising educational attainment are also reflected in black women's greater employment in the professional and managerial category, primarily as teachers and nurses. As the clerical, sales, and professional occupational categories grew for black women after 1960, the service categories diminished, especially private household service. Within Figure 1A's broad "service" category, the share of all black women in private household service fell from about 19 percent in 1960 to only 2 percent in 1980, whereas the share in non-household service increased from about 12 percent in 1960 to 16 percent in 1980. Private household service jobs up to this time were among the lowest paying and most commonly held jobs for black women. Jones (1985, p. 304) emphasizes that clerical work not only paid better than household service, but also entailed access to social security and other benefits, some opportunities for unionization, and less isolation.

By 1990, the racial difference in women's labor force participation rates had largely disappeared. Over the long period described in Figure 1A, black women's gains in clerical, sales, professional, and managerial work were impressive—rising from less than 10 percent of all black women in 1960 to more than 50 percent by 2014. By 2010, black and white women were approximately equally likely to work in clerical and sales jobs. But white women were still substantially more likely to work in professional and managerial jobs (38 versus 28 percent). Moreover, within the broad professional category, white women were more likely to attain relatively high-paying occupations such as physician, dentist, lawyer, and chief executive or public administrator. At the same time, black women were still about twice as likely as white women to hold jobs in the relatively low-paying "household and non-household service" category.

⁶ The history of the "high school movement" is important here (Goldin and Katz 2008). High schools were established later in the South than elsewhere. Within the South, public high schools for black students were relatively rare in the early twentieth century.

One aspect of labor market status that has defied long-run convergence is the black-white difference in the likelihood of unemployment among women. In the census cross-sections, black women have been about twice as likely as white women to be unemployed since 1960. Figure 2 plots annual average unemployment rates from 1972 to 2013 based on CPS data (U.S. BLS 2014, table 12). The rise of unemployment during recessions is clearly evident for both whites and blacks, as is the nearly constant ratio of black/white unemployment rates at around 2. Hoynes, Miller, and Schaller (2012) discuss group differences in employment and unemployment rates since 1979. They find that black women's outcomes are much more responsive than white women's to labor market fluctuations within states over time.

4. Convergence and divergence in wages

Although black-white gaps in women's annual and weekly income have narrowed since 1940, the gaps remain significant and have increased in recent decades.⁷ For each census since 1940 and for the 2014 ACS, we formed samples of women, ages 25-54, who were wage and salary workers at the time of enumeration and reported positive wage and salary income in the previous year. We calculated weekly earnings by dividing the previous year's wage and salary income by the number of weeks worked during the year.⁸ From this group, we sometimes further restricted the samples to those who worked at least 48 weeks in the previous year and at least 35 hours per week (henceforth "full time, full year" workers).⁹ This restriction obviously omits an important segment of the female labor force, but it simplifies some comparisons by abstracting from differences in employment and labor supplied to the market. If black-white differences were to diverge substantially for samples of "all" versus "full time, full year" workers, then we would know that black-white differences in labor supply and employment are an important factor.

Figure 3 plots ratios of median weekly wage and salary income. The figures are based on measures of nominal self-reported income, without adjustment for differences in local cost of living

⁷ See Antecol and Bedard (2002) and McHenry and McInerney (2015) for studies of the wage gap between Hispanic and non-Hispanic white women. Greenman and Xie (2008) discuss race-gender gaps across a wide range of racial and ethnic groups in the U.S., including Asian and Native American women.

⁸ The 1940 census only collected wage and salary information. We focus on samples of wage and salary workers for a more consistent series from 1940 to the present. Trends are similar if we use the IPUMS "inccarn" variable for years 1990-2014. The number of weeks worked is reported differently in different years. For consistency, we used the midpoints of categories in the IPUMS "wkswork2" variable, which is available in all years. This yields similar black-white ratios as when using the more detailed "wkswork1" variable, which is available intermittently.

⁹ The census hours-of-work question changed over time. From 1940-1990, we rely on the IPUMS "hrskwork2" variable, which pertains to the week prior to enumeration. For 2000-2014, we rely on the IPUMS "uhrswork" variable, which pertains to usual hours worked per week in the previous year.

or consideration of non-wage compensation. Thus, there are several shortcomings associated with such commonly reported measures, but the basic pattern of income convergence is still informative and has motivated a large body of research on black-white income differences. Black women meeting the sample criteria described above increased their median weekly earnings from less than 40 percent to more than 80 percent of white women's between 1940 and 2014. Large relative gains are also apparent when we restrict the sample to full-time, full-year workers. In 1980's census data, the racial gap appears to have been eliminated among women (or nearly so for full-time, full-year women), but it has since widened. It is interesting that the black-white ratio of men's wages has never approached equality in the census data, and these differences in levels and trends of wages by race and gender present both a puzzle and an opportunity for researchers (e.g., see Bayard et al. 1999).

Figure 3 shows that in comparison to black men, black women's wages were relatively steady during the 1940s and 1950s, but since 1960, black women have gained ground continually. The economics literature on the achievements of the Civil Rights Movement often notes the gains of black men relative to white men between 1965 and 1975. Yet even as black men made substantial gains, black women outpaced them, and they continued to do after 1980.

Black women also had large gains relative to white men, historically the highest paid race-gender group. In 1940, Figure 3 shows that black women's median nominal weekly earnings were only about 20 percent of white men's. Again, this is true for samples of all workers as well as full-time, full-year workers. After a sizable jump in the 1940s, when black women shifted strongly into more formal sectors of employment (Bailey and Collins 2006), there was a slight decline during the 1950s, but then another sizable increase after 1960. By 2014, the black-female/white-male ratio had risen to about 60 percent (or 65 percent for full-time, full-year workers), though it has plateaued since about 2000.

In all the comparisons shown in Figure 3, it is notable that the largest relative gains for black women occurred between 1960 and 1980. But it is also interesting that the ratios expressed relative to males (both black and white) continued to rise from 1980 to 2000, whereas the black-white female ratio appears to have fallen. Of course, the arithmetic of this pattern implies a relatively rapid increase in white women's median earnings relative to both black women and white men after 1980.

Considering the potential wages of non-participants

In any given year, a large number of potential workers are not actually in the labor force. This complicates the interpretation of levels, differences, and trends in *observed* earnings, such as

those described above. For instance, if many workers with relatively low earnings potential choose to stay out of the labor market, then the earnings observed for those who are employed would be a misleading characterization of the population's true earnings potential. Several scholars have emphasized this point in the context of studying trends in black-white differences in wages for both men and women (Brown 1984, Chandra 2000, Heckman et al. 2000, and Neal 2004).

Figure 4 illustrates one dimension of this concern about selection into the labor force. For all women, ages 25-54, it plots the difference in average educational attainment for those who are in the labor force and those who are not in the labor force, separately for black and white women. A positive difference implies that women in the labor force were better educated on average than those who were not. In that case, given that education is positively rewarded in the labor market, observed wages for women would tend to overstate the full population's average or median earnings potential. Since at least 1960, the educational gap between women in and out of the labor force has been somewhat larger for African Americans than for whites. Since 1980, the gap for black women has been about 1.5 years whereas the gap for white women has been around 1.0 year but rising. As discussed above, measures of educational attainment are far from perfect measures of human capital, but these differences confirm that patterns of selection on skill into samples of wage earners may vary by group and over time.

The difficulty in assessing the importance of selection in this context, of course, is that for those who are not in the labor force, we cannot know exactly what they would earn if they were employed.¹⁰ With longitudinal datasets, when faced with a missing wage observation in a particular year, one can search forward or backward in survey years to find what a person earned when she was in the labor market. Neal (2004) implements this approach to provide a close examination of the black-white gap in potential wages for women circa 1990 based on the NLSY79 cohort. A key lesson from Neal's analysis is that surveys like the NLSY, which contain extensive questions about labor market activity and earnings over many years, may yield substantially different (and larger) estimates of the black-white earnings gap than what is revealed in the census or CPS cross-sections. A second lesson is that even within the NLSY data, where wage observations can be found for more than 90 percent of women, imputing earnings for the remaining women can further widen the black-white gap in potential earnings. For instance, the black-white ratio of average hourly earnings falls

¹⁰ Moreover, we are not considering the general equilibrium effects of a counterfactual in which one supposes that many more women participate in the labor market.

from about 0.82 to 0.79 in 1990 after wages are imputed in a particular way for women without post-secondary education, without spousal support, and with receipt of long-term public aid.¹¹

Longitudinal datasets are not available prior to the late 1960s, but we did undertake a simple approach to estimating potential earnings ratios that cover all women (ages 25-54), not just those who enter the wage-earning sample, over the full 1940 to 2014 period. We created bins defined by the interactions of race, age, education, region, metropolitan residence, and young-child-in-household status.¹² For each year, we then assigned women who are outside our main wage sample the median weekly wage of “in-sample” women in the same categorical bin or, to test sensitivity, 0.7 times that median, reflecting an ad hoc assumption that women out of the labor market would earn less upon entering than similar women who have observed wages. Clearly, there are many things about individuals and their earnings potential that we cannot observe or account for in census or ACS-based datasets, and so these imputations are prone to considerable error for any given individual. That said, the individual-level imputations do not need to be exactly correct to be useful in this exercise, which emphasizes comparisons of medians.¹³

Within each race category, the wages imputed to women outside the base sample are lower than those of women in the base sample (usually by 10 to 20 percent), but the implications for overall black-white ratios of medians are limited, especially in later years when most women are in the labor market. In 2014, for instance, the black/white ratio is 0.853 for women in the base sample, 0.848 for women in a pooled sample (those with observed wages combined with those with imputed wages), and 0.800 in the pooled sample when imputed wages are scaled down by a factor of 0.7. The trends in black-white ratios of medians are fairly similar to what is depicted in Figure 3, with a rapid rise from 1940 to a peak around 1980, followed by a gradual decline. In this sense, shifting selection into the sample with observed wages does not appear to drive the first-order pattern of black-white convergence and divergence in census data, though we suggest that the changing patterns merit further research.

¹¹ See Neal (2004, p. S14). We specifically refer to the results when the imputed wage is 0.75 times the wage observed for similar women. Neal also reports results with the scaling at 0.5 and 0.9.

¹² Bins were defined based on three age categories (25-34, 35-44, and 45-54), four education categories (0-8, 9-11, 12-some college, and 16+), four regions, three metropolitan categories (not-in-metro area, in metro area, and not reported), and whether an “own child” under 5 was in the household.

¹³ Of course, we are not attempting to model the general equilibrium consequences of having the entire female population in the labor force.

5. Economic interpretations of racial differences in wages

The simple tabulations above illustrate black-white differences in labor market outcomes over the last 75 years. Interpretation of those differences involves insight from both economic history and economic theory, starting with definitions of essential concepts. Broadly speaking, differences in labor market outcomes could occur because workers bring different levels of skill or productivity to the market, or because equally skilled workers are treated differently in markets depending on their group membership, or because workers are located in markets with different levels of place-specific productivity. Economists typically define labor market discrimination as occurring when equally productive workers are treated differently in the labor market due to some trait they possess, such as color or gender or both. The difference in treatment could occur in hiring, promotion, pay, benefits, work assignments, or other aspects of the employment relationship. Race and gender discrimination is a salient feature of American labor market history, but as we discuss below, it is difficult to measure the effects of discrimination on observed labor market outcomes (Heckman 1998). It remains an important area of research because one's interpretation of the wage gap between race-gender groups has strong implications for policy priorities and design.

Adjusting for observable worker characteristics and decompositions of the wage gap

Returning to the baseline samples of wage earners, it is straightforward to explore the observed racial wage gap in terms of differences in observable worker characteristics. That is, one can see whether group differences in the distribution of certain characteristics, such as education or region of residence, can “account for” part of the overall black-white wage gap. We begin by estimating ordinary least squares (OLS) regressions of women's log weekly wage or salary income (Y_i) on observable worker characteristics (X) and an indicator variable for race (*Black*). We estimate separate regressions for each census year from 1940 to 2010 and for 2014.

$$Y_i = \alpha + \tau Black_i + X_i' \beta + e_i$$

The X vector of variables includes basic personal characteristics (age and education), household characteristics (marital status and children in the household), location characteristics (region and whether residing in a metropolitan area), and indicators of whether the person works full time and full year.¹⁴

¹⁴ The specific control variables are: age (quadratic); dummy variables for children-under-5, children-over-5, and children over and under 5 in the household; indicators for full year work (≥ 48 weeks in the previous year) and full-time work (≥ 35 hours in previous week or “usual” depending on census year's question); dummies for each level of schooling in the IPUMS “educ” variable; dummies for marital status; dummies for

We caution that in such a framework, some of the control variables may be endogenous to labor market opportunities (e.g., children in the household) and, as discussed earlier in the chapter, omitted variables and measurement error are also concerns. Estimates of τ can be interpreted as the black-white gap in average (log) weekly earnings that is not accounted for by group differences in mean values of X when evaluated at a particular common set of “prices” (in this case, OLS estimates of β coefficients from pooled samples of black and white women). But τ cannot be easily interpreted as the “effect of labor market discrimination,” a point that deserves emphasis and elaboration. First, omitted variables that are correlated with race and influence wages, such as school quality, test scores, experience, or unobserved training, may be reflected in part by the estimate of τ . Of course, differences in school quality may be the result of discrimination in the provision of public goods, which in turn affects labor market outcomes (Card and Krueger 1992, Ashenfelter et al. 2006, Carruthers and Wanamaker 2016), but that is not what economists ordinarily call “labor market discrimination.” Second, it is possible for such regressions to “over control” for differences that are endogenous to labor market discrimination. For instance, an estimate of τ from a regression that adds controls for workers’ occupation and industry would not capture the effect of discrimination that manifests itself in the distribution of workers over job types; rather, it would gauge black-white differences *conditional on* holding similar jobs. Even educational attainment could be influenced by expectations of future labor market discrimination. Third, as we discuss below, theory suggests that labor market discrimination can exist (or change) without showing up in observed black-white wage gaps (or changes in gaps). The key point is that this kind of regression, which is common in the literature on racial and gender disparities, must be interpreted with care. Although τ may resemble a “treatment effect” of race, there is no real sense in which race is quasi-randomly assigned in observational data, which limits causal interpretation (Charles and Guryan 2011).

Figure 5 plots three series for comparison. One series is the unadjusted black-white gap in women’s average log weekly earnings. These are estimates of τ for each year when no control variables are included in the regressions. The next series is an adjusted black-white gap, where estimates of τ represent the “unexplained” gap in average wages after conditioning on X . The last

region of residence (9 regions); and dummies for metropolitan area residence (in metro area central city, in metro area but not central city, in metro area but central city status unknown, and metro status unknown). The sample includes only wage and salary workers.

series consists of alternative estimates of τ from regressions with additional control variables for broad occupational and industrial categories.¹⁵

The unadjusted average gap follows the pattern described earlier based on median wage ratios—a large gap circa 1940 declined dramatically until 1980, and then widened gradually to 2014. The plot of τ from our basic regression specification (with controls for X but not occupation and industry) indicates that some portion of the observed wage gap, but by no means all of it, can be accounted for by differences in workers' readily observed characteristics (X). In 1960, for instance, just before the landmark Civil Rights Act of 1964, there was an unexplained 42 log point gap between the weekly wages of black and white women in the sample. The specification that adds controls for the occupations and industries yields a much smaller, though still partly unexplained gap in 1960.¹⁶

Black women's relative earnings increased rapidly after 1960, as both the unadjusted and the adjusted gaps in weekly wages eroded. Indeed, the census-based estimates suggest that black women in our samples fared about as well as white women in labor markets around 1980 and 1990. Recall, however, that NLSY data suggest a larger gap at that time (Neal 2004). In any case, the pattern we observe in Figure 5 from 1960 to 1980, particularly the decline in the unexplained earnings gap, is certainly consistent with Civil Rights legislation and broader social changes having a positive influence on black women's relative earnings. Yet such a simple analysis is far from a sharp causal estimate of the Civil Rights Movement's effect on black women's earnings.

The relative decline in black women's earnings after 1980 in the census data merits further investigation. It appears that much of the decline is accounted for by observable characteristics, but the unexplained gap (τ) does widen.¹⁷ Changes in selection into the labor force on unobservable characteristics could matter, as could changes in the market returns to skill, or a decline in discrimination that disproportionately benefited white women. Studying the changes in CPS data for young women up to the early 1990s, Bound and Dresser (1999) find evidence consistent with multiple factors contributing to the slide in black women's relative wages, including changes in

¹⁵ Occupational categories are professional and managerial, clerical and sales, craftsmen, operatives, laborer, private household service, non-private household service, farmers, and farm laborers. Industrial categories are agriculture, mining, construction, transportation, wholesale and retail trade, personal services, non-personal services, and public administration.

¹⁶ Blau and Beller (1992) examine black-white gaps for women in CPS data for 1971, 1981, and 1988 and show that occupational upgrading was important for black women, especially for older women and between 1971 and 1981. See also Cunningham and Zalokar (1992).

¹⁷ Note, however, McHenry and McInerney (2014) find no evidence of a black-white gap for women after controlling for test scores and education in the NLSY79 cohort observed in 2006. We discuss this paper later, but for now emphasize that the choice of datasets matters.

educational attainment and returns to education, rapid occupational upgrading for white women, declines in unions, and declines in the real value of the minimum wage. Even so, there is a substantial unexplained component of the change. Bound and Dresser also emphasize that patterns varied depending on the women’s level of education and region. Browne and Askew (2005), Pettit and Ewert (2009), and Dozier (2010) extend this line of research.

To explore the long-run underpinnings of the black-white wage gap in more detail, we use a version of the Blinder-Oaxaca decomposition of mean differences among women (Jann 2008).¹⁸ We refer readers to Fortin, Lemieux, and Firpo (2011) for a thorough review of methods for decomposing wage gaps. Given OLS estimates of labor market rewards (or penalties) for various characteristics, the mean gap in black-white outcomes can be split into “explained” (by mean differences in observable characteristics) and “unexplained” categories. It is straightforward to further split the “explained” category into components attributable to group differences in specific characteristics. The decomposition we undertake is not unique—equally valid but different decomposition techniques would partition the gap somewhat differently.

We find that the black-white gap in educational attainment was by far the most important observable difference (other than race) between black and white female workers for most of the twentieth century. Approximately 21 log points of the wage gap in 1940 can be attributed to educational differences (out of a total of 99 log points). The gap in educational attainment declined after 1940, but the market rewards to education increased, especially after 1980. Thus, even in 2014, about 8 log points of the black-white wage gap can be attributed to differences in mean educational attainment (out of 18 total). The gap associated with differences in region of residence was substantial in 1940 (about 7 log points) but had largely disappeared by 1970, partly due to the Great Migration of African Americans from the South and partly due to the South’s economic growth.¹⁹ Interestingly, observable differences in family structure—marital status and children in the home—appear to have contributed relatively little to the black-white gap in weekly wages, conditional on being in the sample of wage and salary earners and controlling for full-time and full-year work status.

¹⁸ We use a “two-fold” decomposition, described in Jann (2008) and implemented in Stata. The “explained” component consists of differences in average characteristics between groups A and B weighted by a regression coefficient, β^* . The decomposition can be expressed as: $[(\bar{X}_A) - (\bar{X}_B)] \beta^* + [(\bar{X}_A)(\beta_A - \beta^*) + (\bar{X}_B)(\beta^* - \beta_B)]$. The choice of β^* matters in decompositions, but there is no obviously “right” choice in most settings. We use the results of a “pooled” regression (the sample includes black and white women), where the specification includes a race dummy variable, as recommended by Jann (2008).

¹⁹ Here, the choice of β matters. If we were to base the decomposition on regression coefficients for a sample of black women (β_B rather than β^* from a pooled regression), the gap associated with differences in region of residence would appear larger in 1940, reflecting a large regional wage gap among black women. The regional component still falls to near zero by 1980.

It is entirely possible that different datasets or different methods would allocate emphasis differently. For example, Antecol and Bedard (2002) use NLSY79 data, which allows them to construct a better measure of labor market experience than is possible with census data, albeit for a single cohort of women who were ages 14 to 22 in 1979. Circa 1994, their results suggest that differences in women's experience were more important than differences in educational attainment in accounting for the black-white wage gap. There are reasons to be careful in the interpretation of experience in this context. As McHenry and McInerney (2014) point out, accumulated experience may be endogenous to labor market opportunities and discrimination. To the extent that measures of experience reflect the accumulation of human capital, emphasis remains on black-white differences in skills as an important determinant of the wage gap.

Pre-market factors

Neal and Johnson (1996) make a simple but powerful point about wage regressions of the sort described above: educational attainment is a crude measure of skill, and this matters for how we think about racial differences in wages. By shifting emphasis from years-of-education to AFQT scores in the NLSY79 dataset, they show that pre-labor-market test scores can account for the entire black-white difference in women's earnings and for a large share of the difference in men's earnings in 1990. The major implication is that understanding the origins of black-white differences in measured skill is central to understanding the black-white gap in earnings for both women and men. Fryer (2011) extends the Neal and Johnson (1996) results to 2006 using the NLSY79 data and adds analysis using the NLSY97 cohort. He also examines other outcomes, such as employment, incarceration, and health.

McHenry and McInerney (2014) pick up this line of research and extend the analysis in several ways with the NLSY79 data. They show that black women earned less than white women on average and at the median circa 2006. Then, they confirm basic results from Neal and Johnson (1996) and Fryer (2011), showing that in a parsimonious regression controlling for age and AFQT scores, black women earned *more* than white women with similar AFQT scores in 2006. They address potential bias from selection into the labor force by imputing earnings for some women, but this has a small influence on their results. They also address bias from differences in cost of living by incorporating information on local housing prices, and this slightly lowers the apparent advantage of black women relative to white women conditional on AFQT score. Following Lang and Manove (2011), they express concern that results from regressions without controls for years-of-education are biased because educational attainment is rewarded in the labor market and correlated with race even

after controlling for AFQT scores. Black workers in the NLSY79 cohort tend to have more education than white workers with the same AFQT score. Adding a control variable for years-of-education in addition to the AFQT score eliminates the apparent earnings advantage for black women—the coefficient on race falls to near zero. In other words, in the NLSY79 data there is no apparent difference in average wages for black and white women circa 2006 after adjusting for AFQT scores and educational attainment as well as cost of living, labor market experience, and selection.

Of course, such an analysis does not explain why black women had lower test scores and lower educational attainment than whites on average, but it reinforces the message that understanding differences in human capital accumulation early in life is critical to understanding differences in labor market outcomes later. This is an active area of research for economists and other social scientists, and it has important policy implications. Fryer (2011) provides an overview of the evidence. It appears that black-white differences in test scores emerge early in childhood, after the first year of life but before children enter school, and they persist: “Blacks underperform whites in the same schools, the same classrooms, and on every aspect of each cognitive assessment” (p. 893). Conditional on maternal AFQT scores, the black-white gap in children’s scores is much smaller and even reversed for reading scores among young children, but then black children appear to fall behind over time (Fryer 2011, tables 11 and 12). Space does not allow us to delve into the pre-school and school-based interventions that might ameliorate black-white differences in academic performance. Dobbie and Fryer (2011) and Fryer (2011) discuss promising results from the Harlem Children’s Zone, which combines “reform-minded charter schools and a web of community services designed to ensure the social environment outside of school is positive and supportive for children from birth to college graduation...” (Fryer 2011, p. 920). For a more general discussion of the importance of early life human capital formation and policies that might promote it, we refer readers to Elango et al. (2016).

Results discussed above suggest that differences in skills, rather than labor market discrimination per se, are probably the first-order determinants of black-white differences in workers’ earnings today. That does not mean that racial discrimination does not exist or that it does not affect labor market outcomes. And it is certainly possible that discrimination in the past has an ongoing and pernicious effect on skill acquisition and labor market outcomes through intergenerational channels. It is not difficult to tie long-standing racial differences in human capital and earnings to the history of slavery and subsequent discrimination in civil rights, education, healthcare, labor markets and housing markets (inter alia Myrdal 1944; Sharkey 2013; Chay, Guryan, and Mazumder

2014, Margo 2016). In addition, it is plausible that investments in human capital are endogenous to perceptions of labor market discrimination, in which case the two are not easily separated.

Discrimination: History, theory, and policy responses

Space does not allow a full description of the historical scope and intensity of discrimination that African Americans have faced and struggled to overcome. Obviously, “initial conditions” for African Americans were highly disadvantageous for human capital accumulation and economic advance. Just before Civil War, about 89 percent of all African Americans were slaves and heavily concentrated in the South (Haines 2006). After the Civil War, freed slaves generally did not receive compensation or land to facilitate their transition to freedom —“40 acres and a mule” never came to pass. Instead, they entered into the post-war economy with almost no wealth or formal education. They were the poorest group in the nation’s poorest region. Their progress in acquiring literacy and, to a lesser extent, real property in the late nineteenth and early twentieth centuries was remarkable (Higgs 1982, Margo 1984, Williams 2005), but they remained far behind whites on both counts.

In addition to the barriers of poverty, African Americans faced widespread racial discrimination (Myrdal 1944). Often this was under the rule of law, and otherwise, it was commonly enforced by extralegal threats and violence (Alston and Ferrie 1993). After Reconstruction, blacks were systematically disenfranchised in the South, which curtailed their political influence (Kousser 1974). Their children attended separate and inferior schools, as local school boards diverted resources to white schools (Margo 1990). While they found it difficult to advance much in the South relative to whites, they also faced discrimination in northern labor markets, which may have delayed their mass migration from the South. Overall, Margo (2016) estimates that in 1940, the black/white income per capita ratio was just 0.38, up from 0.28 in 1870, but not by much.

In a literature that began at the height of the Civil Rights Movement and continues to this day, economists have developed several types of models to better understand how labor market discrimination manifests itself in workers’ outcomes. Most of the literature studies what happens in labor markets, as firms hire workers and reward them for their productivity. But as the discussion above has emphasized, skills and productivity are themselves products of processes that begin in childhood (or before) and are potentially influenced by other kinds of discrimination (e.g., in education, housing, or healthcare) or by past labor market discrimination (e.g., that affected the resources of one’s parents, grandparents, and so on). The literature is extensive, and so we only highlight landmarks in the field here, and we refer readers to Altonji and Blank (1999), Charles and Guryan (2011), and Lang and Lehmann (2012) for insightful surveys.

The earliest economic models of discrimination were based on Gary Becker's *The Economics of Discrimination* (1957). Becker-based models embed a "taste for discrimination" in employers', employees', or consumers' utility function. They yield powerful insights about whether taste-based discrimination in competitive market settings would lead to equilibrium wage differences between black and white workers and, if so, whether such differences would be sustainable in the long run. For instance, assuming that all workers are equally productive and that labor supply is fixed, when discrimination is based in employer sentiment, workers and employers sort so that black workers end up employed by firms with the weakest taste for discrimination. In equilibrium, a black-white wage gap may exist because firms will pay only the market wage for black workers, which in turn depends on the marginal firm's discriminatory sentiment (i.e., the sentiment of the firm that is indifferent between hiring black and white workers at the equilibrium wage gap). If a sufficient number of firms have no taste for discrimination, however, then the black-white wage gap would vanish even if many discriminatory firms remained in the market (i.e., all the black workers would be matched with firms that have no discriminatory sentiment).

The simple model highlights important, but not at all obvious, interactions between workers' observed wages, the distribution of discriminatory tastes across employers, and the pattern of worker sorting across firms. It also suggests that if a black-white wage gap exists for equally productive workers, then firms that hire black workers should earn higher profits than those that do not, meaning that over time such firms could grow at their competitors' expense and, eventually, drive the wage gap to zero.²⁰ Charles and Guryan (2008) provide novel empirical tests of the Becker model by seeing whether men's black-white wage gaps across states are correlated with measures of the distribution of prejudice among whites, as constructed from questions in the General Social Survey. Their findings are consistent with key predictions of the Becker model, suggesting that discriminatory sentiment plays a role in racial wage disparities for men.

Economists have developed other theoretical approaches to understanding how discrimination might allow racial wage gaps to persist. One branch of literature builds on Becker and incorporates job search costs that differ across race groups due to employer discrimination (e.g., Black 1995; Bowlus and Eckstein 2002; Lang, Manove, and Dickens 2005). The differences in

²⁰ The cases for employee and customer discrimination also provide insights on worker segregation and black-white wage gaps, but space does not allow a full description. Heckman (1998) points out that in the Becker framework discriminatory employers need not be driven from the market if discriminatory entrepreneurs are willing to accept lower profits and the supply of entrepreneurs is not perfectly elastic at zero cost.

search costs, in turn, lead to differences in equilibrium wages, as workers with higher search costs will tend to accept lower-paying job offers.

A second major branch of literature locates the source of black-white wage gaps in imperfect information rather than in tastes for discrimination (e.g., Phelps 1972, Arrow 1973, Aigner and Cain 1977, Fan and Moro 2010). The key insight of “statistical discrimination” models is that firms make hiring decisions and wage offers based on their expectation of a worker’s productivity. Firms are uncertain of what any given worker’s productivity will be. Therefore, they base decisions in part on their perception of the worker’s race or gender group’s average level of productivity. Two workers who rate similarly in terms of observed credentials, which are imperfect indicators of their true productivity, may get different wage offers because they belong to different groups. In addition, even if two groups have the same average level of productivity, workers with the same credentials may get different offers if credentials are a noisier signal of productivity for one group than another. Of course, one might expect employers to learn about their employees’ true productivity over time (Altonji and Pierret 2001, Lange 2007). Altonji and Pierret (2001), using NLSY79 data for men, do find evidence that wages reflect employers’ learning about productivity. But under the model’s assumptions, the patterns are not consistent with the hypothesis that firms statistically discriminate against black men initially but do so less as they learn more about true productivity.

Of course, different models of discrimination might merit more or less emphasis depending on the groups that are involved and the historical setting. For instance, Goldin (2014) provides a model that is particularly relevant to understanding historical discrimination against women’s entry into male-dominated lines of work. In essence, men may resist women’s entry to protect an occupation’s prestige, which is distinct from concern about the effect of women’s entry on earnings.

Public policy with respect to discrimination changed slowly but dramatically between 1940 and 1970. The first federally enforced anti-discrimination policy in labor markets attempted to ban discrimination on the basis of race, color, religion, and national origin in industries essential to World War II production. When that policy lapsed after the war, states started implementing their own anti-discrimination legislation. The effectiveness of such policies is open to debate (Collins 2001, Collins 2003), but their adoption at least signals a change in public discourse and policy. Starting in the mid-1960s, new legislation revolutionized federal policy in this area: the Civil Rights Act of 1964 and Equal Opportunity Act of 1972 addressed labor market discrimination, including discrimination on the basis of sex (Donohue and Heckman 1991, Chay 1998); the Voting Rights Act of 1965 addressed disenfranchisement (Cascio and Washington 2014); and the Fair Housing Act of 1968 addressed housing market discrimination. The judicial branch complemented, and in many cases preceded, the

legislative branch in undermining discrimination (Klarman 2004), as signaled by the *Brown v. Board* decision on segregated schools in 1954. The subsequent evolution of affirmative action in education and employment are beyond the scope of this chapter's discussion; we refer readers to Holzer and Neumark (2000) and Fryer and Loury (2005).

Wright (2013) discusses the broad ramifications of the Civil Rights Movement for blacks' and whites' economic gains in the South. Even though the sweeping changes in policy and norms brought about by the Civil Rights Movement helped narrow the black-white wage gap in the 1960s and early 1970s (Donohue and Heckman 1991), there is no reason to believe that labor market discrimination against women or minorities was completely stamped out when anti-discrimination laws took effect. Examples of discrimination abound still, as evidenced in lawsuits, formal complaints, audit studies, and correspondence studies (Darity and Mason 1998, Goldin and Rouse 2000, Bertrand and Mullainathan 2004). In the context of this chapter, Bertrand and Mullainathan (2004) is an especially important study. They randomly assigned "black sounding" and "white sounding" names to applications sent in response to help-wanted ads. Whereas race cannot be interpreted as randomly assigned in observational data or in-person audit studies, it can be randomly assigned to applications in field experiments like this one. Applications with white-sounding names received about 50 percent more callbacks. However, as the discussion above highlighted, the implications of discrimination at a particular firm, or even many firms, for equilibrium labor market outcomes are subtler than one might at first imagine and remain an important area of research.²¹

6. Conclusions

There is still much to learn about why black-white gaps in labor market outcomes have evolved the way they have, how discrimination in labor markets affects workers' outcomes, and how policy can best address racial disparities. Headway on these topics has benefited from innovations in economic theory and empirics, from integrating historical and economic perspectives, from new and better data sources, and from frank debate and exchange among many scholars over several decades.

We reach two main conclusions based on our review of the economics literature and evidence presented in this chapter. First, while the bulk of the literature on racial disparities in labor market outcomes focuses on men and the bulk of the literature on the gender gap focuses on whites, the labor market history of black women is distinctive. Studying it can enrich our understanding of how race, gender, discrimination, and economic forces have interacted in labor markets over the long run to

²¹ See Bertrand and Duflo (2016) for a careful review of audit and correspondence studies and their implications. See Heckman (1998) for a critique of audit studies.

arrive at today's situation. In the 50 years since the Civil Rights Act of 1964, black women have made sizable gains relative to other groups, but significant gaps in unemployment and earnings remain. Additional attention to black-white differences in outcomes that vary over time by level of education, location, and industry, will add depth to what is surely a complex and heterogeneous story (Bound and Dresser 1999).

Second, differences in human capital have always been important determinants of black-white differences in women's wages, and in a statistical sense they are the most important explanatory variables in modern datasets. Historically, differences in human capital were grounded in a legacy of slavery and discrimination and were subject to slow but significant convergence over generations (Margo 2016). Recent decades, unfortunately, show a mixed record for black-white test score convergence among young Americans (Neal 2006), but the gaps are not immutable (Fryer 2011). In an economy that rewards skill highly, closing racial gaps in income and employment in the future almost surely depends upon first closing gaps in human capital accumulation among children.

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Figure 1A: Black Women's Labor Force Participation and Occupational Distribution, 1940-2014

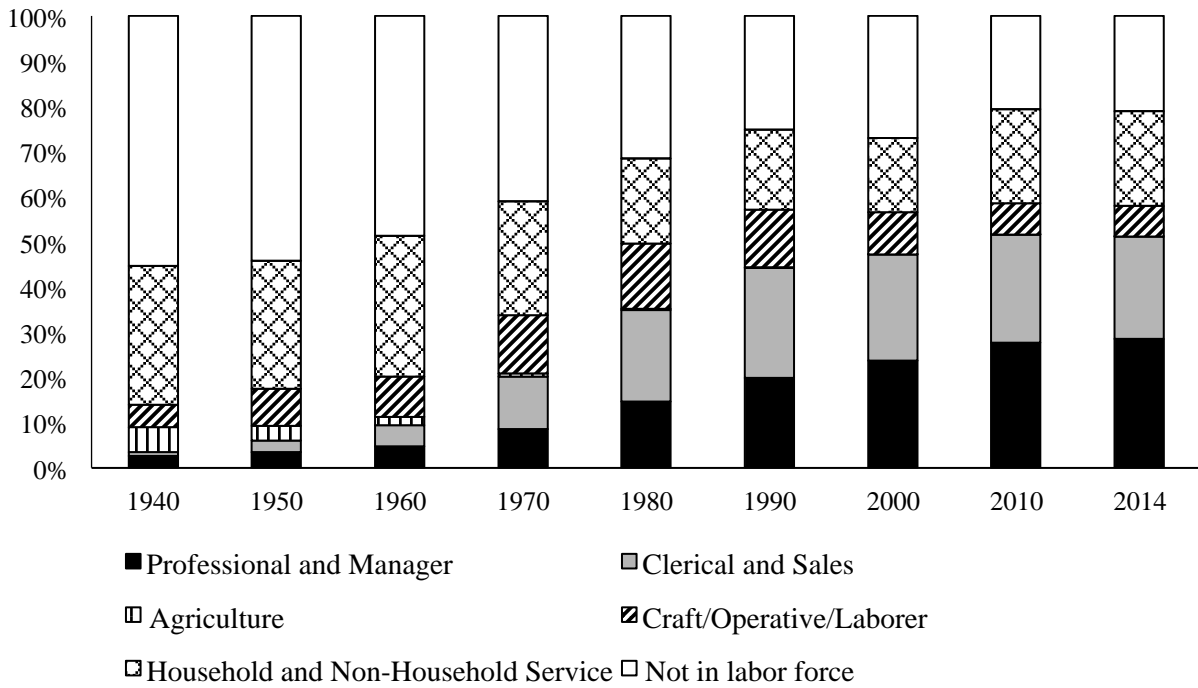
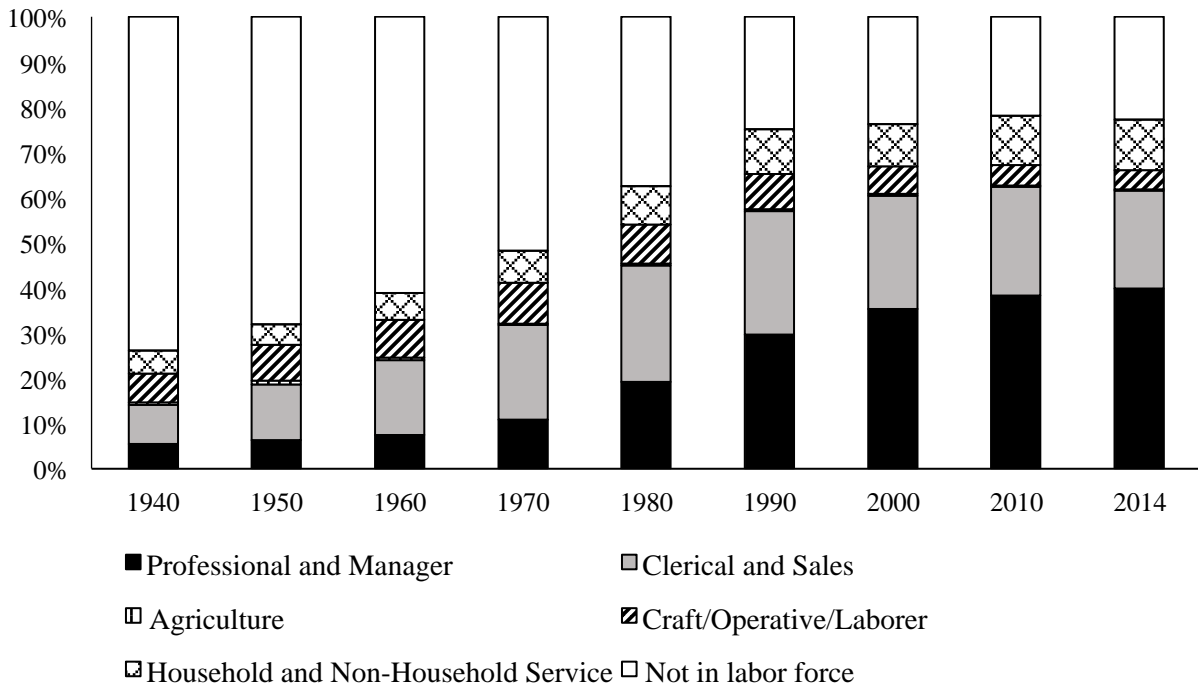


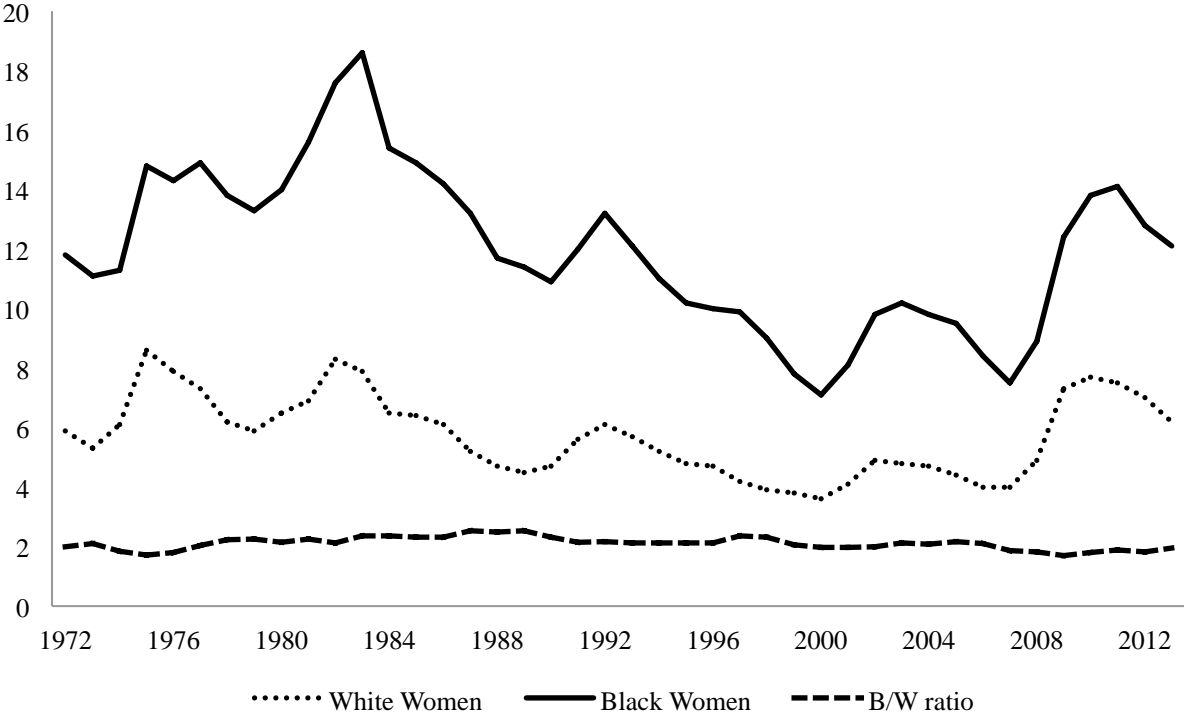
Figure 1B: White Women's Labor Force Participation and Occupational Distribution, 1940-2014



Notes: Samples include non-Hispanic white and black women, age 25-54, with valid occupational and marital status codes. Classification is based on the IPUMS *occ1950*, *labforce*, *hispan*, and *race* variables.

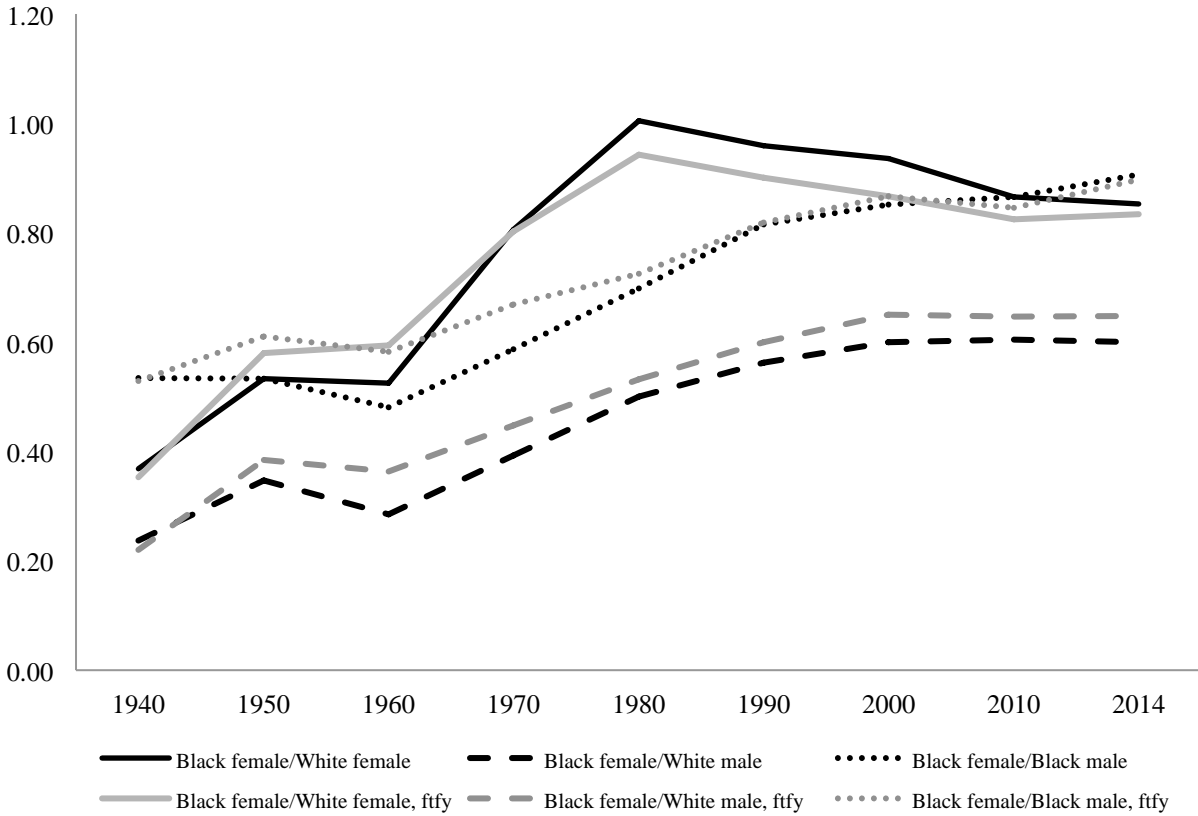
Sources: Public use microdata are from IPUMS (Ruggles et al. 2015).

Figure 2: Women's Unemployment, by Race, 1972-2013



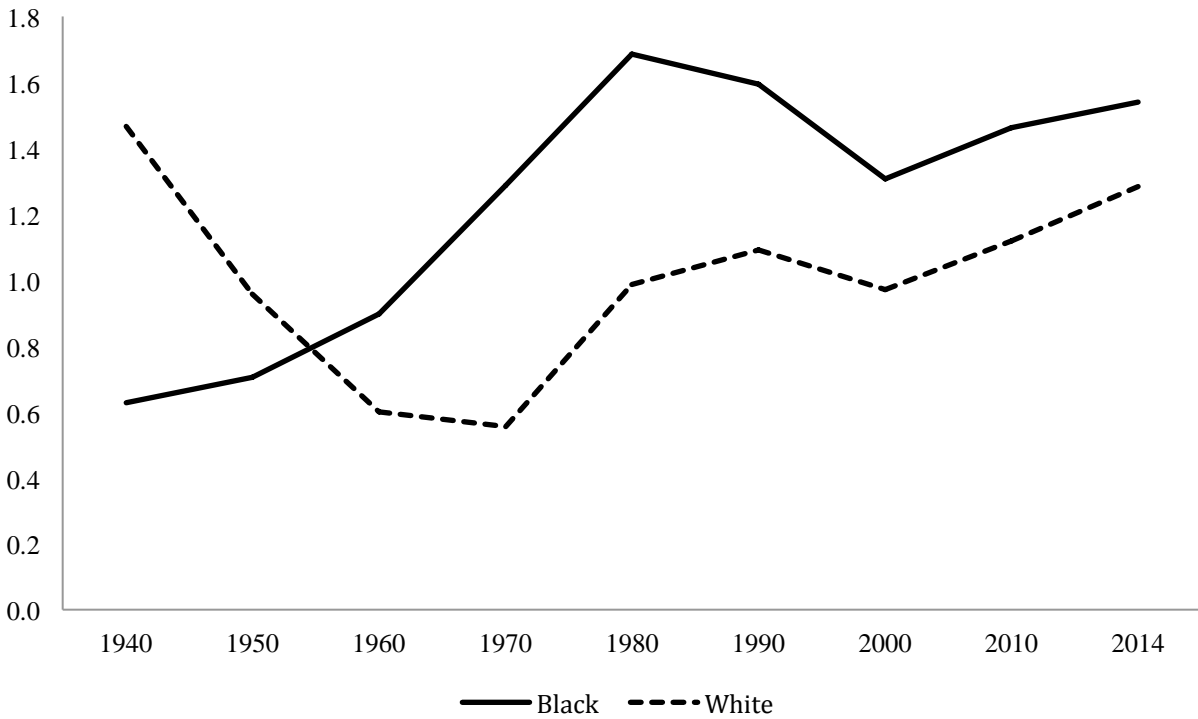
Notes: Unemployment rates pertain to civilian, non-institutional, white or black women (not excluding Hispanic women), age 16 and over, who are in the labor force.
 Sources: U.S. Bureau of Labor Statistics (2014), table 12.

Figure 3: Black/White Ratios of Median Weekly Wage and Salary Income, 1940-2014



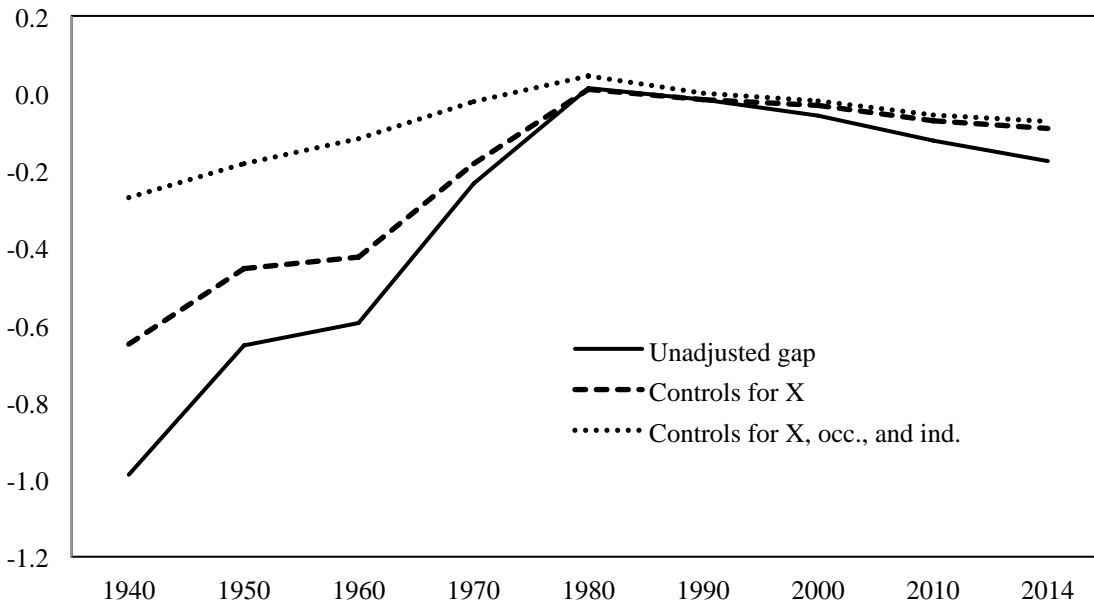
Notes: Samples include non-Hispanic white and black women, ages 25-54, who were wage and salary workers at the time of enumeration and reported positive wage and salary income and positive weeks worked in the previous year, and positive hours worked in the reference period. From 1940-1990, we rely on the IPUMS “hrskwork2” variable, which pertains to the week prior to enumeration; for 2000-2014, we rely on the IPUMS “uhrwork” variable, which pertains to usual hours worked per week in the previous year. Weekly wages are the ratio of the previous year’s wage and salary income over the number of weeks worked expressed as the midpoint of categories from the IPUMS *wkswork2* variable. Results are similar in years when a more refined measure of weeks worked is available (*wkswork1*) or when using *inccearn* for years in which it is available. “Full time, full year” is defined as working at least 48 weeks in the previous year and 35 hours per week under the reference question. Sources: Public use microdata are from IPUMS (Ruggles et al. 2015).

Figure 4: Difference in Average Years of Education for Women in and out of Labor Force, by Race, 1940-2014



Notes: Samples include non-Hispanic white and black women, ages 25-54. Years of education are estimated using the IPUMS variable *educ*, with midpoint values assigned when the variable covers a range of years (e.g., the 5-8 category) and 18 years assigned to those with “5+ years of college.”
Sources: Public use microdata are from IPUMS (Ruggles et al. 2015).

Figure 5: Unadjusted and Adjusted Black-White Gaps in Women's Log Weekly Wages, 1940-2014



Notes: See the text for description of the samples, variables, and regression specifications.
Sources: Public use microdata are from IPUMS (Ruggles et al. 2015).

APPENDIX TABLES

Table 1A: Black Women's Labor Force Participation and Occupational Distribution, 1940-2014

	1940	1950	1960	1970	1980	1990	2000	2010	2014
Professional and Manager	2.55%	3.48%	4.73%	8.62%	14.66%	19.90%	23.67%	27.67%	28.49%
Clerical and Sales	0.85%	2.49%	4.71%	11.52%	20.29%	24.29%	23.52%	23.92%	22.65%
Agriculture	5.65%	3.23%	1.81%	0.80%	0.28%	0.23%	0.09%	0.07%	0.10%
Craft/Operative/Laborer	4.83%	8.22%	8.94%	12.79%	14.38%	12.64%	9.27%	6.92%	6.70%
Household and Non-Household Service	30.79%	28.33%	31.09%	25.28%	18.76%	17.78%	16.41%	20.81%	20.93%
Not in labor force	55.33%	54.23%	48.72%	41.00%	31.62%	25.17%	27.04%	20.62%	21.14%
Married, Not in Labor Force	46.84%	42.15%	36.62%	26.12%	14.87%	8.75%	10.04%	6.10%	6.14%
Single, Not in Labor Force	8.49%	12.08%	12.10%	14.88%	16.74%	16.41%	17.00%	14.51%	15.00%

Figure 1B: White Women's Labor Force Participation and Occupational Distribution, 1940-2014

	1940	1950	1960	1970	1980	1990	2000	2010	2014
Professional and Manager	5.45%	6.28%	7.48%	10.83%	19.13%	29.68%	35.28%	38.31%	39.89%
Clerical and Sales	8.66%	12.27%	16.49%	20.93%	25.82%	27.32%	25.15%	24.00%	21.68%
Agriculture	0.48%	0.84%	0.55%	0.33%	0.46%	0.41%	0.31%	0.26%	0.25%
Craft/Operative/Laborer	6.39%	7.97%	8.45%	9.10%	8.64%	7.75%	6.14%	4.54%	4.21%
Household and Non-Household Service	5.09%	4.49%	5.90%	7.08%	8.52%	9.98%	9.36%	10.94%	11.13%
Not in labor force	73.93%	68.15%	61.13%	51.73%	37.43%	24.87%	23.77%	21.95%	22.84%
Married, Not in Labor Force	67.24%	62.95%	57.21%	47.56%	33.20%	20.50%	18.47%	15.16%	15.13%
Single, Not in Labor Force	6.69%	5.20%	3.92%	4.17%	4.23%	4.37%	5.30%	6.79%	7.72%

Notes: Samples include non-Hispanic white and black women, age 25-54, with valid occupational and marital status codes. Classification is based on the IPUMS *occ1950*, *labforce*, *hispan*, and *race* variables.

Sources: Public use microdata are from IPUMS (Ruggles et al. 2015).

Table 2: Women's Unemployment, by Race, 1972-2013

	1972	1973	1974	1975	1976	1977	1978	1979	1980	
White Women	5.9%	5.3%	6.1%	8.6%	7.9%	7.3%	6.2%	5.9%	6.5%	
Black Women	11.8%	11.1%	11.3%	14.8%	14.3%	14.9%	13.8%	13.3%	14.0%	
Black/White Ratio	2.00	2.09	1.85	1.72	1.81	2.04	2.23	2.25	2.15	
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
White Women	6.9%	8.3%	7.9%	6.5%	6.4%	6.1%	5.2%	4.7%	4.5%	4.7%
Black Women	15.6%	17.6%	18.6%	15.4%	14.9%	14.2%	13.2%	11.7%	11.4%	10.9%
Black/White Ratio	2.26	2.12	2.35	2.37	2.33	2.33	2.54	2.49	2.53	2.32
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
White Women	5.6%	6.1%	5.7%	5.2%	4.8%	4.7%	4.2%	3.9%	3.8%	3.6%
Black Women	12.0%	13.2%	12.1%	11.0%	10.2%	10.0%	9.9%	9.0%	7.8%	7.1%
Black/White Ratio	2.14	2.16	2.12	2.12	2.13	2.13	2.36	2.31	2.05	1.97
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
White Women	4.1%	4.9%	4.8%	4.7%	4.4%	4.0%	4.0%	4.9%	7.3%	7.7%
Black Women	8.1%	9.8%	10.2%	9.8%	9.5%	8.4%	7.5%	8.9%	12.4%	13.8%
Black/White Ratio	1.98	2.00	2.13	2.09	2.16	2.10	1.88	1.82	1.70	1.79
	2011	2012	2013							
White Women	7.5%	7.0%	6.2%							
Black Women	14.1%	12.8%	12.1%							
Black/White Ratio	1.88	1.83	1.95							

Notes: Unemployment rates pertain to civilian, non-institutional, white or black women (not excluding Hispanic women), age 16 and over, who are in the labor force.

Sources: U.S. Bureau of Labor Statistics (2014), table 12.

Table 3: Median Weekly Wage and Salary Income, by Race and Gender, 1940-2014

	1940	1950	1960	1970	1980	1990	2000	2010	2014
Black Female	\$6.50	\$21.43	\$30.39	\$69.61	\$176.57	\$319.78	\$470.59	\$568.63	\$588.24
White Female	\$17.65	\$40.23	\$57.84	\$86.36	\$175.78	\$333.33	\$503.09	\$656.86	\$689.66
Black Male	\$12.16	\$40.20	\$63.22	\$118.63	\$252.99	\$392.16	\$552.94	\$656.86	\$649.02
White Male	\$27.45	\$61.76	\$106.86	\$177.45	\$353.04	\$568.63	\$784.31	\$941.18	\$980.39
Black Female FTFY	\$6.47	\$24.51	\$40.20	\$79.41	\$194.22	\$352.94	\$509.80	\$647.06	\$686.27
White Female FTFY	\$18.35	\$42.27	\$67.65	\$99.02	\$205.98	\$392.16	\$588.24	\$784.31	\$823.53
Black Male FTFY	\$12.24	\$40.20	\$69.07	\$118.63	\$267.75	\$431.37	\$588.24	\$764.71	\$764.71
White Male FTFY	\$29.41	\$63.73	\$110.78	\$177.45	\$364.80	\$588.24	\$784.31	\$1,000.00	\$1,058.82
Black female/White female	0.368	0.533	0.525	0.806	1.004	0.959	0.935	0.866	0.853
Black female/White female FTFY	0.353	0.580	0.594	0.802	0.943	0.900	0.867	0.825	0.833
Black female/White male	0.237	0.347	0.284	0.392	0.500	0.562	0.600	0.604	0.600
Black female/White male FTFY	0.220	0.385	0.363	0.448	0.532	0.600	0.650	0.647	0.648
Black female/Black male	0.535	0.533	0.481	0.587	0.698	0.815	0.851	0.866	0.906
Black female/Black male FTFY	0.529	0.610	0.582	0.669	0.725	0.818	0.867	0.846	0.897

Notes: Samples include non-Hispanic white and black women, ages 25-54, who were wage and salary workers at the time of enumeration and reported positive wage and salary income and positive weeks worked in the previous year, and positive hours worked in the reference period. From 1940-1990, we rely on the IPUMS “hrskwork2” variable, which pertains to the week prior to enumeration; for 2000-2014, we rely on the IPUMS “uhrswork” variable, which pertains to usual hours worked per week in the previous year. Weekly wages are the ratio of the previous year’s wage and salary income over the number of weeks worked expressed as the midpoint of categories from the IPUMS *wkswork2* variable. Results are similar in years when a more refined measure of weeks worked is available (*wkswork1*) or when using *inccearn* for years in which it is available. “Full time, full year” is defined as working at least 48 weeks in the previous year and 35 hours per week under the reference question.

Sources: Public use microdata are from IPUMS (Ruggles et al. 2015).

Table 4: Average Years of Education for Women in and out of Labor Force, by Race, 1940-2014

	1940	1950	1960	1970	1980	1990	2000	2010	2014
Black, Not in LF	5.67	6.81	8.03	9.19	10.41	11.29	11.84	12.00	12.10
Black, In LF	6.30	7.51	8.93	10.48	12.09	12.88	13.14	13.46	13.64
Black, Difference	0.63	0.70	0.90	1.29	1.69	1.59	1.31	1.46	1.54
White, Not in LF	8.53	9.65	10.48	11.26	11.94	12.41	12.85	13.06	13.13
White, In LF	10.00	10.61	11.08	11.81	12.92	13.50	13.83	14.17	14.41
White, Difference	1.47	0.96	0.60	0.56	0.99	1.09	0.97	1.12	1.28

Notes: Samples include non-Hispanic white and black women, ages 25-54. Years of education are estimated using the IPUMS variable *educ*, with midpoint values assigned when the variable covers a range of years (e.g., the 5-8 category) and 18 years assigned to those with “5+ years of college.”

Sources: Public use microdata are from IPUMS (Ruggles et al. 2015).

Table 5: Coefficients on Race Dummy from Regressions of ln(weekly wage), 1940-2014

	1940	1950	1960	1970	1980	1990	2000	2010	2014
Unadjusted	-0.988 (0.008)	-0.653 (0.012)	-0.594 (0.006)	-0.234 (0.006)	0.013 (0.005)	-0.017 (0.004)	-0.059 (0.004)	-0.123 (0.004)	-0.175 (0.004)
Controls for X	-0.650 (0.008)	-0.454 (0.012)	-0.424 (0.006)	-0.182 (0.005)	0.009 (0.004)	-0.015 (0.004)	-0.032 (0.003)	-0.071 (0.003)	-0.091 (0.003)
Controls for X, occupation, and industry	-0.271 (0.009)	-0.183 (0.013)	-0.118 (0.006)	-0.022 (0.005)	0.044 (0.004)	0.002 (0.003)	-0.020 (0.003)	-0.056 (0.003)	-0.073 (0.003)
N	59459	25363	138278	184134	253566	342341	376688	349499	325965

Notes: See the text for description of the samples, variables, and regression specifications.
Sources: Public use microdata are from IPUMS (Ruggles et al. 2015).