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ABSTRACT

The weekly wage gap between black and white female workers narrowed by 15 percentage points during the 1940s. We employ a semi-parametric technique to decompose changes in the distribution of wages. We find that changes in worker characteristics (such as education, occupation and industry, and region of residence) can account for a significant portion of wage convergence between black and white women, but that changes in the wage structure, including large black-specific gains within regions, occupations, industries, and educational groups, made the largest contributions. The single most important contributing factor to the observed convergence was a sharp increase in the relative wages of service workers (where black workers were heavily concentrated) even as black women moved out of domestic service jobs.

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The Wage Gains of African-American Women in the 1940s

Abstract: The 1940s marked a turning point in the labor market outcomes of African-American women. They experienced large wage gains relative to white women, sharp declines in agricultural and domestic service work, and significant increases in formal sector employment. Using a semi-parametric decomposition technique, we assess the influence of changes in productive and personal characteristics, in workers' distribution across occupations and locations, and in the wage structure on both black women's absolute wage gains and those relative to white women's. We argue that the pattern of changes is most consistent with increasing demand for their labor in the formal sector.

In the 1940s the average real weekly wages of black women nearly doubled, thereby narrowing the racial wage gap among non-farm working women by a full 15 percentage points.[1] At the same time, the proportion of employed black women holding formal sector jobs increased from 27 to 50 percent.[2] According to our best estimates of the racial wage gap, the 1940s marked a dramatic departure from African-American women's experiences earlier in the twentieth century, as they took a large first step

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[1] The figures are calculated using the wage income variable of Ruggles, et al., *Integrated*, and using the consumer price index for deflation. Sample restrictions are described in the notes to figure 1. The average weekly wage for black women rose from $13 to $24 (1950 dollars). The black-white ratio increased from 0.44 to 0.59. See figure 1 notes for sample restrictions. Cunningham and Zalokar, "Economic Progress," report results of a similar magnitude (0.44 to 0.64) for estimates of hourly wages. Ad hoc adjustments for cost of living differences between metropolitan areas and non-metropolitans areas (discounting metro area income by 20 percent) have little effect on the magnitude of the wage gains. And, as discussed later, the bulk of the absolute and the relative gains were not driven by selection into the labor force.

[2] For the sake of brevity, we use the term "formal sector" to denote all occupations outside agriculture and private household service.

towards greater economic equality.

Previous research has focused on the decade's significance in spurring the labor-force participation of white women and wage growth among black men.[3] But black women's labor market outcomes evolved quite differently from those of other groups.[4] Consequently, their economic history cannot be understood as a mere combination of the existing stories for white women and black men.

By developing a detailed ecology of black women's labor market experiences in the 1940s and setting it in contrast to previous and subsequent decades, this paper contributes to a central theme in American economic history: the story of how race, gender, and labor markets interacted over the course of the turbulent twentieth century. Our argument is twofold. First, we claim that the 1940s were a watershed decade for African-American women's integration into formal sector employment and marked a turning point in the growth path of their wages relative to those of white women. The labor market gains during the 1940s were not continuations of pre-existing trends, and the relative wage gains in the 1940s are comparable to those achieved during the 1960s and commonly associated with the Civil Rights Movement.[5] Moreover, the 1940s advances were sustained. Over the 1950s, black women's wages and occupations did not revert back toward their pre-World War II distributions, nor did the wage gap between black and white women widen.

Second, using a semi-parametric decomposition methodology pioneered by John DiNardo, Nicole Fortin and Thomas Lemieux, we quantify the importance of changes in the wage structure *after*

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[3] Goldin, "Role"; Maloney, "Wage"; Margo, "Explaining".

[4] See Blau and Beller, "Black-White Earnings," and Neal, "Measured" for examinations of more recent trends in the racial wage gap among women.

[5] Changes in black women's wages were larger in absolute terms during the 1940s than the 1960s, but the gains relative to white women were approximately the same in each decade. We offer a detailed comparison later in the paper. The black-white wage gap continued to narrow in the 1970s, which we do not capture in our comparison. But because the 1940s gains were almost certainly concentrated in the 1941 to 1945 period, we think it is useful to compare them with the gains achieved in a similar five-year period following the 1964 Civil Rights Act.

accounting for changes in black and white women's productive and personal characteristics and in their representation across jobs and locations.[6] We find that large wage gains in domestic service jobs (where black women were concentrated) relative to clerical jobs (where white women were concentrated) made significant contributions to racial wage convergence. But even within job categories and after accounting for observable characteristics, black women's wage gains outpaced those of whites. The results suggest that such black-specific wage gains account for approximately 38 percent of the decade's total convergence in mean weekly wages.

The large net flow of black women into formal sector jobs (which is not explained by changes in their observable characteristics) coupled with pervasive increases in black women's wages relative to those of white women (even in the occupations black women were leaving) is consistent with a substantial increase in the relative demand for their labor in the formal sector. Previous work has shown that wartime labor demand, complemented by institutional and policy changes, permitted many black workers to attain better-paying jobs and compressed the American wage structure.[7] Although we cannot directly measure the prevalence of discriminatory practices, it appears that black women took moved into new types of employment that generated a new distribution of wages and occupations that lasted well beyond the extraordinary years of World War II.

In subsequent decades, African-Americans built upon their wartime economic advances. They increased their presence in jobs that were in urban areas and covered by formal contracts and benefits, minimum wage legislation, and collective bargaining. This better positioned them to organize and advocate for Civil Rights, to take advantage of formal-sector networks of employment and information, and to gain employment in previously racially exclusive firms.[8] Moreover, with higher household income

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[6] DiNardo, Fortin, and Lemieux, "Labor Market".

[7] See Goldin and Margo, "Great Compression," for a thorough discussion of the wage structure's compression. See Reed, *Seedtime*, and Collins, "Race," and "Labor Market," on government anti-discrimination policies during the war. See Moreno, *Black Americans*, on unions.

[8] Membership in the National Association for the Advancement of Colored People (NAACP) skyrocketed

and increasing urbanization, their children faced, on average, better educational opportunities and labor market options than were available in the rural South.[9] In this sense, the rapidly changing employment pattern of African Americans in the 1940s – particularly when viewed in contrast to the pace of occupational and wage convergence before World War II – laid the foundation for later economic, political, and social progress.

BLACK WOMEN'S WAGES AND JOB MOBILITY: THE 1940S IN HISTORICAL CONTEXT

The importance of the 1940s in the economic history of racial disparities is highlighted by abrupt and pervasive changes in African-American women's labor market outcomes. First, our estimates of the black-white ratio of mean nonfarm wages among women from 1909 to 1969 indicate that the 1940s marked a turning point. As we discuss below, accounting for potential sample selection or measurement error does not greatly alter the magnitude of mean wage convergence in the 1940s. Second, the wage gains were widespread. Black women's wages increased throughout the wage distribution and throughout the country, both in absolute terms and relative to white women's wages. Part of this was due to their movement into higher paying occupations, yet even within occupational groups, black women's wages increased faster than white women's. Third, the timing of the wage gains for black women corresponds to sharp changes in their occupational distribution. Later in the paper, we argue that this combination of findings is consistent with strong demand-side shifts that signaled the start of a long-run, though episodic,

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during World War II (Tushnet, *NAACP's Legal Strategy*, p. 135). Reed characterizes the period as *Seedtime for the Civil Rights Movement*. See Whatley, "Getting a Foot," on the importance of employers' changing hiring practices during World War I.

[9] For example, in the 1950 microdata sample (Ruggles et al., *Integrated*), school enrollment rates were significantly higher for blacks residing in metropolitan areas than for those in non-metro areas, particularly at relatively young (under 7) and old (over 14) ages. Despite the Supreme Court decision in *Brown v. Board of Education* in 1954, most southern schools remained segregated until the mid 1960s (Clotfelter, *After Brown*), and the South historically lagged the non-South in its commitment to public education (Nicholls, *Southern Tradition*; Wright, *Old South*).

decline in labor market discrimination against black women. Due to data constraints, we focus our examination of wages on samples of wage and salary workers employed in non-farm occupations (as described in appendix 1), but our examination of the occupational redistribution of women incorporates farm sector employees.

Changes in Mean Wages, 1909-1969

Prior to 1940, the census did not collect information on workers' wages, and other sources of wage information are either unrepresentative of the national labor force or not race-specific (or both). Nonetheless, one can estimate the black-white nonfarm wage gap for earlier years using three sources of wage and labor force data: (1) the 1940 sample of the *Integrated Public Use Microdata Series* (henceforth *IPUMS*) allows the calculation of mean wages for women by race-industry-region cells in the previous year;[10] (2) the *IPUMS* samples for earlier years (1910, 1920, and 1930) reveal the distribution of female workers across race-industry-region cells in each census year; and (3) the industry-level average wage series from *Historical Statistics of the United States* indicate how the inter-industry wage structure changed over time.[11]

Specifically, we calculate the average black-white wage gap in a given year as

$$\hat{G}_t = \frac{\hat{\overline{W}}_t^B}{\hat{\overline{W}}_t^W} = \frac{{}^{1}\!/_{N_t^B} \sum_{r,i} N_{r,i,t}^B \cdot \overline{W}_{r,i,1939}^B \cdot \frac{\overline{W}_{i,t}}{\overline{W}_{i,1939}}}{{}^{1}\!/_{N_t^W} \sum_{r,i} N_{r,i,t}^W \cdot \overline{W}_{r,i,1939}^W \cdot \frac{\overline{W}_{i,t}}{\overline{W}_{i,1939}}} \quad , \tag{1}$$

[10] Ruggles, et al. For simplicity, we often refer to the census year when discussing wage gains, though the census income question always pertains to the previous calendar year.

[11] U.S. Department of Commerce, *Historical Statistics*, pp. 166-167. To maintain a reasonable number of observations per race-industry-region cell in 1940, we used two-digit industry categories (rather than the more detailed three-digit codes). We distinguish workers by industry categories (rather than occupations), because the long-run wage series reported in *Historical Statistics* are industry-based. See the notes to figure 1 for more information. This approach is similar in spirit to that taken in Smith, "Race". We extend his idea, however, by allowing geographic redistribution and industry-level wage

where $N_{i,r,t}$ denotes the number of women observed in industry *i*, in region *r*, at time *t* (and $N_t=\Sigma_{i,r}N_{i,r,t}$) using the 1910, 1920, or 1930 *IPUMS* sample, and $\overline{W}_{i,r,1939}$ denotes a race-specific mean wage computed for women within industry-region cells using the 1940 *IPUMS*. The superscripts, *B* or *W*, indicate black or white respectively. The ratio, $\frac{\overline{W}_{i,t}}{\overline{W}_{i,1939}}$, denotes the average wage in industry *i* in year *t* relative to the average wage in industry *i* in 1939 as reported in *Historical Statistics*.[12]

The estimated series, therefore, incorporates changes in the representation of black and white women across regions and industries, $N_{i,r,t}$, and changes in industry-level wages, $\frac{\overline{W}_{i,t}}{\overline{W}_{i,1939}}$. Because the wage series from *Historical Statistics* are not specific to sex, race, or region, the estimates implicitly assume that within industries the relative wage gaps across these groups remained stable over time.[13]

Under these assumptions, figure 1 suggests that the 1940s marked a dramatic break with the past – black women's relative wage gains were large and most likely unprecedented in the twentieth century.

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fluctuations to affect the estimated black-white wage gap for women.

[12] For example, we can calculate the average wages of black women in the South who worked in household service in 1940 and then extend a series backwards using the wages for domestic servants reported by U.S. Department of Commerce, *Historical Statistics*. Then, we can assign a wage to each southern, black, domestic servant in the 1910, 1920, and 1930 *IPUMS*. We can do the same for every other race-region-industry category, and then, by averaging across all female workers (by race) in a particular year we can obtain an estimate of the black-white wage ratio.

[13] For example, southern black domestic servants are assumed to have the same wage *changes* (in percentage terms) as northern white domestic servants, although they are allowed to have different wage *levels*. The dearth of race-specific wage data for women in the early twentieth century makes this assumption difficult to support, but the existing fragmentary evidence suggests that it is plausible. Wright cites a 25 percent racial gap in median wages for women in Virginia manufacturing establishments in 1907 (textiles for whites, tobacco for blacks) (*Old South*, p. 183). The *IPUMS* data suggest a nearly identical racial gap in median wages in non-durable manufacturing in Virginia (and the entire South Atlantic region) in 1939. Moreover, it is reassuring that when extended forward to 1950, the estimated series captures 80 percent of the actual increase in blacks' relative wages (the actual ratio changes from 0.44 to 0.59, and the estimated ratio changes from 0.44 to 0.55).

Rather than being a continuation of previous trends, it appears that the 1940s may have reversed a slight, downward trend in black women's relative wages from 1909 to 1939. From a different empirical perspective (and cognizant of the scarcity of race-specific wage data for women before 1940), Claudia Goldin argues that the black-white wage ratio for women probably declined from 1900 to 1940: "... if the 1940 ratio of white to black female earnings ... is applied to the data for white earnings in 1890 or 1900, the resulting black female earnings are far too low. This implies that the ratio of black to white earnings must have decreased from 1890 to 1940, an inference that is consistent with the formidable restrictions on black women's employment during the period."[14]

Comparing wage convergence during the 1940s to that in later decades is more straightforward because the decennial census surveyed workers about both their annual wages and the intensity of their work (for example, weeks of work in the previous year or hours of work in a recent week).[15] Therefore, the wage ratios for 1939 to 1969 in figure 1 are based on actual census data. After a comparatively slight rise in the 1950s, figure 1 depicts a sharp increase in the black-white wage ratio during the 1960s. That black workers gained ground in the 1960s is widely-known and well-documented. In fact, the volume of the literature on wage trends after the Civil Rights Act of 1964 tends to obscure the significance of the 1940s.[16] Nonetheless, the relative wages gains in the 1940s for black women were just as large as those

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[14] Goldin, *Understanding*, p. 249. Anderson, "Last Hired", points out that despite the observed gains, discrimination against black women was still very common in the 1940s.

[15] Because actual weeks worked are not reported in the 1960 and 1970 census, we divide annual wages by the mean number of weeks worked by individuals in a given interval using information on the distribution within intervals from the 1950 census. When undertaking the decomposition analysis we also account for changes in reported hours of work. We did not attempt to calculate an hourly wage because the census hours variable does not pertain to the previous year (whereas income and weeks worked do).

[16] See, inter alia, Freeman, "Changes"; Brown, "Black-White Earnings"; Smith and Welch, "Affirmative Action"; Donohue and Heckman, "Continuous versus Episodic Change"; Card and Krueger, "School Quality"; Chay, "Impact"; and Neal, "Measured".

recorded during the 1960s (16.2 versus 15.8 percentage points in figure 1), and the absolute real wage gains in the 1940s were considerably larger.

Selection and Measurement Issues

To be sure, changes in the composition of our samples (selection) or changes in the composition of total earnings may have influenced changes in the observed black-white wage gap among women. One might hypothesize, for example, that the increase in white women's labor-force participation could increase the proportion of white workers with few skills, or that in-kind payments to black domestics could skew the measures of earnings. Here, we assess the potential influence of differential changes in labor force participation, differential changes in labor market experience (an unobservable characteristic in the census), and in-kind payments to servants.

First, it seems unlikely that a disproportionate increase in the number of relatively low-skilled white workers is artificially driving the observed wage convergence among non-farm workers. It is true that the fraction of white women (from ages 18 to 64) in the labor force increased from 28 to 32 percent from 1940 to 1950 and that the fraction of black women working remained relatively stable at approximately 43 percent. But at the same time, the proportion of black, female workers in agriculture declined from 15 to 8 percent, suggesting that a large number of relatively unskilled black women transitioned into our sample of non-farm wage workers. Additionally, although it is not possible to identify "new entrants" to the labor force in the census data, the decompositions presented later in the paper explicitly take account of changes in a number of observable personal characteristics. In general, these decompositions suggest that changes in age, marital status, child-at-home, and hours of work explain little of the overall racial convergence.

A hypothetical calculation further demonstrates that the scope for sample selection's effect on the black-white mean wage ratio is narrow. For example, increasing the sample size of white women in 1940 by four percentage points (to simulate the change in the participation rate from 28 to 32 percent) and assigning all of the additional workers the wage we observe for white women at the 25^{th} percentile would

raise the black-white ratio from 0.44 to only 0.46. Assigning each additional worker a wage we observe at the 10th percentile for white women would raise the black-white ratio to only 0.48. To drive the entire increase from 0.44 to 0.59, we would have to assign the additional workers large negative incomes. These simple calculations take no account of general equilibrium effects on the wage structure, but the point is clear: even extreme assumptions about the unobserved skill of additions to the white labor force do not account for the strong pattern of convergence at the mean.

Differential changes in labor-market experience among black and white workers during the war may also confound measures of wage convergence. A unique collection of retrospective work histories collected in the 1951 "Palmer Survey" allows an evaluation of this issue for more than 4,000 female workers residing in Chicago, Los Angeles, New Haven, Philadelphia, San Francisco and St. Paul.[17] To our knowledge, it is the only dataset that contains retrospective information on women's labor market experiences during the 1940s. The data suggest that there is no statistically or economically significant racial difference in the number of months that women who were in the labor force in 1951 had worked during the 1940s. Nor is there much difference in the 1940s months-of-work gap between black "entrants" (those not in labor force in 1940, but in labor force in 1951) and black "non-entrants" (those in the labor force in both years) compared to the gap between white "entrants" and "non-entrants."[18] This evidence cannot completely dismiss the hypothesis that differential changes in experience levels mattered,

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[17] Gladys Palmer directed the study which collected work histories for men and women in 1951 if they were in the work force. It is also known as the "Six-City Survey." See Palmer, "Labor Mobility"; Goldin, "Role"; and Collins, "African-American Economic Mobility". The women's transcription cards (and most of the men's) remain in the archives of the University of Pennsylvania. We thank Claudia Goldin for sharing the data for women with us.

[18] Pre-1940 experience cannot be ascertained. With city fixed effects and controlling for age (quadratic), marital status, and years of education, black entrants had 46 months less experience during the 1940s than non-entrants; white entrants had 45 months less experience than white non-entrants. Although not nationally representative, the proportions of entrants in the samples for white and black women are nearly the same: 41 percent of blacks in the sample in 1951 were entrants and 42 percent of whites were.

but it does deflate the notion that this was an important factor in determining the black-white wage gap.

Yet another concern is that unobserved payments in-kind to domestic servants might lead to an overstatement of the actual earnings gains, because black women disproportionately moved out of jobs with potentially high levels of unobserved compensation. To investigate this, we inflated all household servants' weekly wages by 20 percent in the 1940 and 1950 samples (a figure that approximates the gap in earnings between black workers in household service and those in other forms of service after adjusting for observable characteristics) to gauge the effect on the wage distributions and measures of inter-racial convergence. Although the *levels* of the black-white wage ratios at the mean and at the 25th percentile are raised by the adjustment (in both 1940 and 1950), as one would expect given the concentration of black women in household service, the characterization of relative wage *changes* during the 1940s is not greatly affected. The ratio of average wages increases by 0.14 in the 1940s with the ad hoc adjustment for potential in-kind payments, whereas the increase is 0.15 without the adjustment.[19] Therefore, the remaining analysis proceeds without the adjustment.

The Changing Distribution of Wages in the 1940s

To widen the perspective on wages, figure 2 plots the full distributions of the log of real weekly wages in 1939 and 1949. Vertical lines mark the distributions' medians.[20] Black women's weekly wages at each percentile fell far below the wages of white women in 1939 (panel A). For example, the median black woman's wages fell slightly below the 10th percentile of the white distribution, and the 90th percentile of the black distribution fell slightly below the 50th percentile of the white distribution. By

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[19] At the 25th percentile, the black/white ratio increased by 0.12 with the adjustment and by 0.11 without it. By 1940, live-in servants were rare. Only about five percent of all household servants (black and white) appear to reside with their employers (using the "related" variable in the 1940 *IPUMS* sample to identify "domestic employees").

[20] See the notes to figure 2 for a description of the sample. Distributions of hourly wages exhibit similar patterns. Later in the paper, we pay careful attention to changes in the number of hours worked when decomposing the wage gains.

1949 (panel B), the wage distributions of both groups had not only increased in absolute terms (hence their rightward shift), but the black women's distribution converged strongly upon that of white women, as reflected in the narrowing space between the medians. In 1949, the median black woman's wages were near the 15th percentile of the white distribution, and the 90th percentile of the black distribution exceeded the 65th percentile of the white distribution.

Figure 3 plots the percentage increase in real weekly wages at several percentiles in the income distributions for black and white women and for men. For the sake of brevity and consistency with other studies of wage convergence, the figure follows convention and compares wage gains across groups at particular percentiles in each group's distribution.[21] This is merely the distributional analog of the usual comparisons made at the center of the distribution like the mean or median (for example, figure 1 uses the mean).[22]

Each plot in figure 3 rests well above zero, which reflects the dramatic real wage gains throughout the distribution for all four groups. At the medians, blacks' weekly wages (for both men and women) increased at nearly twice the rate of those for whites. Another notable feature is the absence of wage compression among black women. While the rate of wage gains among black women was large and fairly uniform across percentiles, the strong downward trend in the other plots is indicative of wage compression within those groups.[23]

The absence of compression among black women may reflect two factors. First, even workers at the high end of the black women's wage distribution often worked in low-skill jobs in 1940. There were

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[21] For comparison see Margo, "Explaining"; Gottschalk, "Inequality"; and Autor and Katz, "Changes".

[22] Nonetheless, readers might find other comparisons to be of interest. For example, as just noted, the median wage level of blacks in 1939 was approximately the same as that for whites at the 10th percentile, but the median wage value for blacks increased substantially more than the wage at the 10th percentile for whites (0.66 versus 0.49 log points). Such cross-percentile views are possible in the tables presented later in the paper, though our discussion emphasizes the conventional "same percentile" comparisons.

[23] There is compression in the sense that the percentage change in income is larger below the median than above it, although absolute dollar gains need not have the same pattern.

many more household servants above the 75th percentile of the black distribution than there were operatives or school teachers (the highest paying jobs commonly held by black women). The compression between skill groups emphasized by Goldin and Margo, therefore, might not have impinged on the top end of the black women's distribution.[24] The wage setting policies of the National War Labor Board, for example, were most relevant in areas that employed comparatively few black women.[25] Second, the availability of a large pool of unskilled black women in agriculture and the rural South may have dampened wage growth at the lower percentiles of the black women's non-farm wage distribution.

Changes in the Occupational Wage Structure

Table 1 provides an occupation-based perspective on the changing wage structure. In one important sense the changes in the wage structure were similar for black and white women – specifically, service wages increased relative to wages in other fields. But because black and white women were distributed so differently across occupations, the changes in the occupational wage structure had different implications for the overall wage gains of black and white women. Moreover, even within occupational categories, the wage gains for blacks were often larger than for whites.

The first column of table 1 simply lists the proportion of black or white female workers in four broad occupational categories in 1950. The second column reports the average change in real weekly wages for women in a particular category (by race) from 1939 to 1949. The third column is the product of the first two. Large within-category wage changes carry more weight if they occur in categories that include a large proportion of workers. Because the change in wages within occupational categories could reflect not only "pure" changes in occupational wages but also in the characteristics of those in the occupation cell (such as marital status, educational attainment, and region of residence), we have also calculated an "adjusted wage change." For women in each occupational group (separately by race), we

[24] Goldin and Margo, "Great Compression."

[25] See Rockoff, *Drastic Measures*, for a history of price and wage controls.

make the adjustment by regressing the log of real wage in the 1940 and 1950 samples on observable characteristics and a year dummy for observations from the 1950 sample.[26] The coefficient on the year dummy is reported in column 4.

Wage gains were pervasive across occupational categories in the 1940s, with the largest gains occurring in service jobs. Black women were heavily concentrated in service jobs, and despite the large wage gains, this was the only nonfarm employment category with a declining share of black women's employment. Although wage gains in the service category for white women were also large, the effect on the overall white wage structure was comparatively small due to the low representation of white women in service. Rather, white women were highly concentrated in the professional, clerical, and sales category, the job category experiencing the smallest increase in wages. These broad patterns remain even after adjusting for observable characteristics (column 4). Complementing the effect of differential wage gains across occupations, it is evident that *within* each category (except the "laborer" category, where very few women worked) the wage gains were larger for black women than for whites.[27]

Changes in Occupational Distributions, 1910-1970

The extraordinary demands of wartime production and the conscription of men for the armed services induced a significant redistribution of women across occupations in the 1940s. The sharpness of the break in the 1940s is evident in table 2 which documents the occupational distributions of black and white women from 1910 to 1970. Through most of the twentieth century, white women were much more

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[26] The regressions control for a set of age, education, hours, and region of residence dummy variables as well as binary indicators for marital status, metropolitan residence and the presence of a child at home.

[27] An earlier version of this paper included partitions by region and educational category. Wage gains by southern blacks exceeded those of blacks elsewhere, and within every region, black wage gains far exceeded those of whites. Nonetheless, the importance of the differential wage growth in the South should not be overstated: assigning southern black women the percentage wage gains that occurred elsewhere (rather than the southern increase) would lower the national average wage gain by only a few percentage points.

likely than black women to be employed in professional, clerical, sales, and operative jobs. In contrast, black women were much more likely to be employed in household service and agriculture.

Between 1940 and 1950, the representation of black women in household service declined rapidly, a clear departure from the steady increases from 1910 to 1940. At the same time, the proportion of black women working as operatives almost doubled. Although the proportion of white women employed in household service also declined (from a relatively low base), the proportion working as operatives remained fairly constant. Instead, white women's representation in the clerical sector increased by almost seven percentage points. The transitions among white and black women appear especially large given the gradual nature of changes before 1940 (and in the 1950s). In fact, a simple dissimilarity index calculated across broad occupational categories (similar to those in table 2) for each census year is essentially flat from 1910 to 1940 (approximately 0.61) before declining in the 1940s (to approximately 0.53).[28] The shifts in table 2 are similar to those reported by the Bureau of Labor Statistics for the 1940 to 1944 period, indicating World War II's central place in the story.[29]

It is possible that changes in observable characteristics, such as educational attainment and region of residence, may account for the striking racial differences in occupational sorting among women.[30] We investigate the relationships in two sets of probit regressions for each census year from 1910 to 1970. In the first set of regressions, the dependent variable is formal sector employment (=1 if employed outside

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[28] The dissimilarity index indicates the proportion of a group (for example, black women) that would have to switch occupations to match the occupational distribution of another group (for example, white women). We calculate it with broad occupational groupings similar to those in table 2, using only the "main line" figures for professional and operative jobs (not the subcategories) and the subcategory lines for service jobs.

[29] Wolfbein, "War," p. 2.

[30] The impact of educational attainment on wages is a major theme in the literature on racial wage convergence among men, especially post-1960 (Smith and Welch, "Black Economic Progress"; Margo, *Race*; Card and Krueger, "School"), but less is known about the long-run implications for women's labor market outcomes.

agriculture and household service, for a sample that includes all workers). In the second set, the dependent variable is household service employment (for a sample that includes only non-farm workers). The regressions control for race (=1 if black), literacy (or years of education), region of residence, metropolitan status, age categories, marital status, and the presence of a child at home.[31] The coefficient on the race variable indicates the magnitude of the racial difference in the dependent variable that cannot be accounted for by differences in the included covariates. For instance, the coefficient on race may reflect unobservable differences in human capital (perhaps related to the quality of schooling) or may be due to pervasive labor market discrimination. When additional information becomes available in the 1940 census, we include dummy variables for categories of educational attainment (rather than literacy) in the regressions. Finer controls for human capital absorb some of the residual effect otherwise attributed to race and yield a slightly smaller, but still very large, "unexplained" difference in occupational concentration at mid-century.

Figure 4 plots the estimated coefficients on the race dummy variable. Three important points are immediately clear. First, the racial differences were large even when controlling for observable characteristics. At mid-century, measures of educational background and geographic location do not explain the crowding of black women in domestic service. Second, there was little change in the association between race and the likelihood of employment in the formal sector or domestic service from 1910 to 1940. During the 1940s, however, there was a sharp decline in the likelihood of black women being household servants. Closely related is the abrupt increase in the conditional likelihood of employment in the formal sector, which reflects movement out of both agriculture and household service. Finally, there was no reversion after the 1940s. The estimated race coefficients continued on the path set in the 1940s.

Such measures are, of course, indirect and imperfect indicators of discriminatory practices in

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[31] The census reports literacy until 1930 and highest grade completed from 1940 onward. To maintain a consistent specification over time, we assume that those who finished at least second grade are literate by

hiring, but they suggest a retreating color line in some areas of the formal sector. Just as black women were much more likely to work as household servants than would be predicted on the basis of their observable characteristics in 1940, they were far less likely to work in operative and clerical jobs. Nonetheless, during the 1940s, the magnitude of the race coefficient (from similar probit regressions) fell from -0.16 to -0.08 for operative workers.[32] In contrast, there was a slight increase in the magnitude of the race coefficient during the 1940s for clerical workers (it increased from -0.18 to -0.23). Rather, black women's breakthrough into the clerical sector occurred in the post-1960 period, as the daughters and grand-daughters of the working women of the 1940s entered the labor force.[33]

DECOMPOSING WOMEN'S WAGE GAINS IN THE 1940S

To quantify the importance of changes in workers' personal characteristics, in workers' geographic distribution, in the overall wage structure, and in the wage structure for black women relative to white women, our decompositions employ a semi-parametric technique pioneered by DiNardo, Fortin and Lemieux (henceforth "DFL").[34] This approach is similar in spirit to standard Blinder-Oaxaca decompositions and, like other decomposition techniques, cannot account for general equilibrium and spill-over effects.[35] One advantage of the DFL approach, however, is that it retains the 1950 wage structure for each race, while re-weighting observations from 1950 such that the distribution of

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census standards (see Margo, *Race*, for justification of this threshold).

[32] The underlying sample for this calculation includes farm workers, whereas in figure 4 we calculated the household service regressions for samples that exclude farm workers.

[33] See Cunningham and Zalokar, "Economic Progress," and Sundstrom, "Servants," on long-run occupational change.

[34] DiNardo, Fortin, and Lemieux, "Labor Market".

[35] Blinder, "Wage Discrimination"; Oaxaca, "Male-Female Wage Differentials". See Acemoglu, Autor, and Lyle, "Women," on the potential effects of changes in women's labor supply on wage inequality during the 1940s.

individuals' characteristics resembles the distribution of characteristics from 1940. The resulting counterfactual distribution of weekly wages is the distribution that would have prevailed in 1950 if women's characteristics had not changed from 1940 to 1950, assuming that changes in characteristics over the decade did not affect the wage structure. Our discussion in the next section parallels that in DFL.

In the next step, we carry this decomposition further by estimating the race-specific changes in the labor market returns to worker characteristics during the 1940s. We use these estimates to distinguish between the changes in black women's wage structure that were in common with those among white women and the changes that accrued specifically to blacks. Both steps of the decomposition provide a rich characterization of changes across the full range of the wage distribution, while relaxing assumptions about the wage structure that are implicit in Blinder-Oaxaca decompositions.[36]

Accounting for Changes in Worker Characteristics

Let W be a random variable denoting the log of wages, $\boldsymbol{X}$ denote the vector of individual characteristics, and t_w and t_x be binary random variables that indicate the year (1940 or 1950) in which either W or $\boldsymbol{X}$, respectively, is observed. For example, an observation on an individual sampled in the 1950 census could be written (W, $\boldsymbol{X}$, t_w=50, t_x=50). We assume that wages and characteristics have the joint distribution, F(w, $\boldsymbol{x}$, t_w, t_x). Thus, the joint distribution of wages and attributes in 1950, for instance, can be written as F(w, $\boldsymbol{x}$| t_w=50, t_x=50). Using Bayes' rule, the marginal density of wages in 1950 can be written as the expected value of the conditional density of wages given the vector of characteristics, $\boldsymbol{X}$, in 1950, or

$$f_{50}(w) \equiv f(w;\, t_w=50,\, t_x=50) = \int f(w|\, x,\, t_w=50)\, dF_{\boldsymbol{X}}(x|\, t_x=50). \qquad (2)$$

Supposing that workers' characteristics had remained distributed as they were in 1940 and that the changes in characteristics over the 1940s did not affect the wage structure, the counterfactual wage

[36] See Barsky et al., "Accounting," for a discussion of potential problems associated with standard parametric assumptions and the strengths of this technique in the context of decomposing the inter-racial wealth gap. See appendix 4 for Blinder-Oaxaca decompositions.

distribution may be written as a weighted function of the actual 1950 density,

$$f(w\,;\,t_w{=}50,\,t_x{=}40) = \int f(w|\,x,\,t_w{=}50)\,dF_{\boldsymbol{X}}(x|\,t_x{=}40)$$

$$= \int f(w|\,x,\,t_w{=}50)\,dF_{\boldsymbol{X}}(x|\,t_x{=}50)\;\psi_x(x), \qquad (3)$$

where $\psi_x(\boldsymbol{x}) = \dfrac{dF_{\boldsymbol{X}}(x|\,t_x{=}40)}{dF_{\boldsymbol{X}}(x|\,t_x{=}50)}$ is a counterfactual "reweighting function" that is applied to the 1950 wage density. This function is simply the ratio of the probability mass in 1940 to that in 1950 for the realization of a specific set of characteristics, $\boldsymbol{X}$. For instance, a woman observed in 1950 whose characteristics are less likely to be observed in 1940 receives less weight in the counterfactual distribution, while a woman in 1950 with characteristics more likely to be observed in 1940 receives more weight. In this manner, the counterfactual density is obtained by reweighting every individual observed in 1950 such that the distribution of characteristics in 1950 resembles the distribution of $\boldsymbol{X}$s in 1940.

This high-dimensional reweighting function can be transformed into a simple estimation problem by again applying Bayes' rule and the definition of discrete probability functions,

$$\psi_x(\boldsymbol{x}) = \frac{dF_{\boldsymbol{X}}(\boldsymbol{x}|\,t_x{=}40)}{dF_{\boldsymbol{X}}(\boldsymbol{x}|\,t_x{=}50)} = \frac{dF_{\boldsymbol{X}}(t_x{=}40\,|\,\boldsymbol{x})\,dF(\boldsymbol{x})\;dF_{\boldsymbol{X}}(t_x{=}50)}{dF_{\boldsymbol{X}}(t_x{=}50\,|\,\boldsymbol{x})\,dF(\boldsymbol{x})\;dF_{\boldsymbol{X}}(t_x{=}40)} = \frac{\Pr(t_x{=}40\,|\,\boldsymbol{x})}{\Pr(t_x{=}50\,|\,\boldsymbol{x})}\,\frac{\Pr(t_x{=}50)}{\Pr(t_x{=}40)}\,. \qquad (4)$$

We estimate the first ratio of the final expression and use the ratio of the count of observations in 1950 to the count in 1940 for the second ratio. After obtaining estimates of ψ_x for each individual in 1950, the empirical distribution and the weights are used to compute the counterfactual wage distribution. More details on our implementation of this method are available in appendix 2.

Accounting for Changes in the Wage Structure

To incorporate the influence of the changing structure of wages into the decomposition framework, we estimate separate wage regressions for white and black women in 1940 and 1950, including controls for age, education, region, occupational and industrial categories, marital and child status, and metropolitan residence,

$$W_{iy}^{r} = X_{iy}^{r}\beta_{y}^{r} + \varepsilon_{iy}^{r} \qquad (5)$$

where r indexes race and y indexes the year. Based on the estimates of β from these regressions, we

predict a counterfactual 1940 wage for each woman observed in the 1950 sample using the equation,

$$\hat{w}^{r}_{i40} = W^{r}_{i50} - X^{r}_{i50}(\hat{\beta}^{r}_{50} - \hat{\beta}^{r}_{40}). \quad (6)$$

This adjustment simulates the 1940 wage distribution by adjusting the estimated returns to various *X*s observable characteristics in 1949 to those prevailing in 1939. Wage structure changes for black women can be further decomposed into two parts: 1) a part attributable to changes in the "common wage structure" (that is, changes that parallel those for white women); and 2) a part attributable to differential changes in the labor market returns for black women relative to white women. Thus, the simulated 1940 wage for a black woman observed in 1950 can be written as

$$\hat{w}^{B}_{i40} = W^{B}_{i50} - X^{B}_{i50}[(\hat{\beta}^{W}_{50} - \hat{\beta}^{W}_{40})] - X^{B}_{i50}[(\hat{\beta}^{B}_{50} - \hat{\beta}^{B}_{40}) - (\hat{\beta}^{W}_{50} - \hat{\beta}^{W}_{40})]. \quad (7)$$

In equation 7, the second term, $X^{B}_{i50}[(\hat{\beta}^{W}_{50} - \hat{\beta}^{W}_{40})]$, captures the change in the common wage structure. The next component, $X^{B}_{i50}[(\hat{\beta}^{B}_{50} - \hat{\beta}^{B}_{40}) - (\hat{\beta}^{W}_{50} - \hat{\beta}^{W}_{40})]$, represents differential changes the wage structure for black women relative to white women. In combination with the procedure that re-weights the 1950 observations to simulate the 1940 distribution of characteristics, the final counterfactual distribution approximates the full 1940 wage distribution.[37] The results from the wage regressions are reported in appendix 3.

Decomposition Results: Women's Absolute Wage Gains

In the context of this paper's investigation, it is useful to partition the vector of individual characteristics, ***X***, into four subsets presented here in the order they enter the decomposition: 1) a set of individual attributes including eight age categories, eight hours-worked categories, and indicator variables for marital status and the presence of a child at home; 2) a set of five dummy variables denoting levels of educational attainment; 3) a set of eleven occupational and ten industrial categories; and 4) a set of

[37] We adjust the prices after reweighting 1950 characteristics to reflect those observed in 1940. Thus, after obtaining the estimates from equation 7, we use the distribution generated by $\theta_i \psi_i^{B} \hat{w}^{B}_{i40}$ (where θ_i

location dummies, including nine census region categories and an indicator variable for metropolitan residence. We provide more detailed definitions of each of these variables in appendix 1 and present Blinder-Oaxaca decomposition results for comparison in appendix 4. Because we are especially interested in the fraction of the total change in wages attributable to occupational upgrading and the changing compensation structure *after* accounting for personal (age, marital status, child present in home, hours worked) and productive (education) characteristics, these characteristics enter first in the decomposition sequence.[38] Following this initial adjustment, the decomposition quantifies how worker mobility across jobs and locations transformed the overall distribution of wages.

Table 3 presents the results for black (panel A) and white (panel B) women. Taken together, changes in observable characteristics (second row of panel A) account for an increase of 0.14 log points at the mean of the black women's distribution, or about one quarter of their average wage gains during the decade. However, at different points in the wage distribution, changes in characteristics account for different proportions of the wage gains. At the 10th percentile, for example, observable characteristics account for none of the gains among black women. For white women, the total wage increase at the mean is much smaller than for blacks, as is the contribution of changes in observable characteristics (0.06 log points, or 19 percent of the total gain at the mean).

Table 3 also breaks down the results into the four detailed subcomponents described above. For black women, changes in the basic composition of the work force (age, marital status, child at home, and hours supplied) tended to raise weekly wages by the most at and above the median. In contrast, the influence of these characteristics is smaller for white women throughout the distribution.[39] Changes in

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denotes the sample line weight assigned to individual *i* in 1950) to decompose the prices.

[38] This is similar in spirit to correcting for selection on observable worker characteristics. For a discussion of the potential importance of selection on unobservables for the ratio of mean wages, see the text.

[39] The nature of the decomposition, which adjusts for personal characteristics simultaneously, makes it difficult to infer precisely what drives this result. A Blinder-Oaxaca decomposition at the means suggests

educational attainment had positive and relatively uniform effects throughout the distributions for both black and white women. For black women, the contribution was somewhat larger, but the racial difference in this regard is small. Occupational and industrial changes made almost no difference to the wage profile of white women, except at the low end of the percentile distribution where the decline in domestic service would be most influential.[40] Among black women, however, occupational and industrial shifts made their biggest impact at the median of the percentile distribution, accounting for an increase of 0.09 log points in wages (14 percent of the total). This represents the largest single contribution (at any percentile) of all changes in observable characteristics and reflects the movement from domestic service to more lucrative employment.

After accounting for occupational and industrial changes, the remaining influence of geographic shifts is small for both black and white women. A narrow interpretation of this finding is that locational shifts *per se* were not major factors in racial wage convergence in the 1940s (for example, movements of domestic servants from the South Atlantic to the Mid-Atlantic census regions did not contribute much if the migrants remained domestic servants). A broader interpretation is that the geographic redistribution of black workers out of the rural South and into cities coincided with their occupational and industrial mobility. The implication is that the Great Migration's influence on black women's wages in the 1940s was inextricably linked to the job changes that migration facilitated.

Table 4 decomposes changes in the wage structure. Panel A breaks the absolute real wage gains for black women into four components: the influence of changing characteristics (as reported in table 3), the influence of changes in the common wage structure for women, the influence of differential changes in the wage structure for black women (relative to whites), and a residual. At the median and mean, the contribution of wage structure changes is more than twice that of changes in characteristics. In other words, near the center of the distribution, changes in characteristics account for one-quarter to one-third

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that no single component of these characteristics is responsible.

[40] It is possible, of course, that non-pecuniary aspects of their jobs improved.

of black women's absolute wages gains, while changes in the wage structure account for the other two-thirds to three-quarters. Differential changes in the wage structure for black women (in the row labeled "black-specific wage structure") account for roughly 15 percent of the absolute wage gains. Panel B of table 4 reports analogous results for white women.[41]

More detailed wage structure decompositions are difficult to interpret and potentially misleading, because they hinge crucially on the choice of a comparison group to represent the "baseline" wage increases.[42] However, it is worth noting that if manufacturing operatives are chosen as the omitted ("baseline") group, then it appears that both changes in common wage structure (which favored domestic servants over clerical and professional workers) and widespread black-specific wage gains within job categories made the largest contributions to racial wage convergence, as initially suggested by table 1.[43]

The implications of changes in worker characteristics and in the wage structure for the wage distribution of black women can be seen in figure 5. Each panel shows how the distribution changes during one step of the decomposition process. Panel A moves from the actual 1950 wage distribution to a counterfactual with 1940's worker characteristics (but with the 1950 wage structure). Panel B starts with the previous panel's counterfactual distribution and shows how adjusting the common wage structure affects the distribution's shape and location – the new counterfactual distribution is much further to the left because of the large baseline wage gains in the 1940s. The change in Panel C reflects differential changes in the black wage structure. The influence appears to be small in terms of percentage change in absolute wage levels, but the black-specific wage adjustment is significant in terms of narrowing the black-white wage gap. The last panel simply graphs the counterfactual distribution from panel C against

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[41] Because we designate the wage structure for white women as the "common wage structure" in equation 7, there is no distinction between "common" and "race-specific" changes for white women (panel B).

[42] The mean changes in unobservable characteristics as well as those characteristics in the omitted categories of dummy variables are captured in the regression intercept. See Jones, "On Decomposing". The interpretation of the baseline wage changes and, by extension, the magnitude of changes attributed to changes in other "price" components is ambiguous.

the actual 1940 wage distribution. The differences between the two are reported in table 4 (panel A) as residuals.

Decomposition Results: Wage Convergence between Black and White Women

Table 5 distills the implications of the decomposition analysis for wage convergence. First, the median of the black real wage distribution increased by 0.30 log points more than the median of the white distribution. At other points in the distribution, however, the difference between blacks' and whites' gains differed, as implied by figure 3. Wages at the 10^{th} percentile of the black women's distribution declined relative to those at the 10^{th} percentile of the white distribution, and the wage gap widened. Elsewhere in the distribution, gains among blacks were larger than among whites. The unevenness of the relative gains over the percentiles reflects, among other things, the strong compression of wages among white women (for example, slow wage growth at 90^{th} percentile compared to 10^{th}) and the lack of compression in the distribution for black women that we noted above.

Second, the "due to characteristics" section of table 5 combines the information from each panel of table 3 to highlight the contributions of changes in characteristics to wage convergence between white and black women. Black workers' educational gains contributed to convergence at every percentile, though the magnitude is not large. Occupational and industrial shifts appear to have been more important factors for racial convergence, especially from the 50^{th} to 75^{th} percentiles. These shifts together with geographic relocation made an economically significant and direct contribution to the narrowing of the race gap among women, especially above the 25^{th} percentile.

Third, changes in the wage structure made even larger contributions to wage convergence than changes in characteristics throughout the percentile distribution. These contributions were roughly evenly split between the "common" and "black-specific" changes in the wage structure, averaging approximately 0.10 log points each. Thus, there was a great deal of catch-up for black workers "within categories", and rapid wage growth in occupations and industries that employed large shares of the black

[43] These results are available from the authors upon request.

workforce reinforced this convergence.

Comparing the 1940s Wage Gains with Those in the 1950s and 1960s

Table 6 places the 1940s in comparative perspective by applying the same decomposition methods to racial wage convergence in the 1950s (panel B) and 1960s (panel C).[44] The results for the 1940s (panel A) are not identical to those in previous tables due to slight modifications in the sample and estimation procedure for the sake of consistency and comparability across decades (see the table's notes for more details).

The pace of income convergence was much faster during the 1940s than during the 1950s. This was true despite the continuing migration of blacks from the rural South, the continuing decline in household service employment, and the continuing improvements in workers' educational attainment. Each of these factors is reflected in the positive figures in the "due to characteristics" row of panel B. Overall, black workers' wages increased by approximately five percent relative to white workers at both the means and medians of the distributions in the 1950s, approximately one-fifth of the size of the relative increase during the 1940s. The "black-specific wage structure" line indicates that black workers in the 1950s continued to gain relative to whites within categories but that changes in the common wage structure more than offset the black-specific improvements. Thus, an important difference between the 1940s and 1950s is that changes in the wage structure tended to raise the relative wages of black women in the 1940s but not in the 1950s.

In contrast, the narrowing of the mean wage gap between black and white women during in the 1960s was comparable in magnitude to that in the 1940s. However, the gains were spread differently across the percentiles of the distribution. In the 1960s, relative wage gains were large at the 10^{th} percentile (but not in the 1940s), and they were small at the 90^{th} percentile (but large in the 1940s). The differing results in the 1940s and 1960s at the 10^{th} percentile are closely connected to changes in worker

[44] For comparison with the DFL-based decomposition results, readers can find Blinder-Oaxaca decompositions (at the means) in appendix 4.

characteristics. In the 1940s, changes in worker characteristics tended to widen the wage gap at the 10th percentile (see table 3), but in the 1960s the gains associated with occupational and educational attainment were larger for black than for white women. At the 90th percentile, changes in the common wage structure in 1940s that dampened wage growth at the top of the white wage distribution, but not at the top of the black distribution, account for a large share of the differing results between the 1940s and 1960s.

In both the 1940s and the 1960s, changes in black workers' characteristics, locations, and jobs, in addition to black-specific changes in the wage structure made large contributions to black-white wage convergence. In the 1960s, however, changes in the common wage structure had a smaller impact on convergence than in the 1940s. Thus, wage convergence in the 1960s was overwhelmingly a story of race-specific factors: black women got better jobs (breaking through into clerical work), and within job categories, black women's wages increased much faster than white women's.

INTERPRETATION AND CONCLUSION

This paper's emphasis on the 1940s as a break from past experience places recent research on racial wage convergence in a broader historical perspective and provides a natural and essential point of departure for the study of more recent labor market trends. The literature's disproportionate emphasis on men in the post-1964 period obscures labor market developments that favored both African-American workers and women well before the era of Civil Rights and Equal Rights. Moreover, understanding the distinctions between black and white women's experiences informs a deeper understanding of the influence of race and gender in labor markets over the course of the twentieth century.

The wartime economy, though exceptional and temporary, had an extensive and sustained impact on the economic status of African-American female workers. Job and geographic mobility, strong wage growth in jobs that employed many black women, and large increases in the compensation of black

women relative to whites within job categories propelled large gains in black women's weekly wages. At the mean, changes in black women's observable characteristics, especially occupational upgrading, account for about one-third of the 1940s' racial wage convergence. Apart from the occupational redistribution, changes in the general wage structure account for another third of racial wage convergence. The remaining third of wage convergence is associated with wage gains among black women than exceeded those of observationally similar whites.

The movement out of household service jobs and, even more importantly, wage gains within service jobs are central to this story. The economics literature has rarely studied household service occupations despite George Stigler's observation that "in 1939 there were as many domestic servants as employees of the railroads, coal mines, and automobile industry combined."[45] Although the long-run evolution of household-production technologies and family size may have undermined demand for domestic servants, declining employment opportunities did not drive blacks' rapid movement from the service sector in the 1940s. Black domestic servants had larger wage gains than women in other occupations, which suggests that they were pulled from domestic service jobs by higher wage levels and new opportunities elsewhere.

This interpretation is consistent with contemporary observations. For example, based on a wartime survey in New Orleans, Harlan Gilmore and Logan Wilson report that "the principal complaints coming from full-time employers [of servants], however, were that the better types of servants were going into war industry" and that part-time employers "blamed rising wages and the shortage of really competent Negro women" on the defense boom. "As one housewife expressed it: 'To tell you the truth, I think they're [black women] making too much money. . . . I hope I'll live to see the day when they'll be glad to work for you again.'"[46]

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[45] Stigler, "Domestic Servants," p. 2. See also Anderson and Bowman, "Vanishing Servant".

[46] Gilmore and Wilson, "Employment," p. 321-322.

That day never arrived. Even during the economy's postwar reconversion, black women did not typically return to domestic service or farm occupations. Based on information collected by the Census Bureau, Seymour Wolfbein reports a slight decline in both domestic service and farm shares of black female employment between April 1944 and April 1947.[47] After 1950, we find that black women continued to leave household service employment (table 1 and figure 4), and their wages continued to rise relative to those of white women (figure 1).

The 1940s were not the last decade of dramatic racial wage convergence among women, but they were the first in the twentieth century. A number of plausible, and perhaps complementary, explanations for this turning point warrant further exploration. The sharp increase in demand for workers during the war, in combination with a sharp decline in the availability of new immigrants, might have led employers to seek out black workers.[48] Wartime propaganda that trumpeted the need to raise levels of production and that decried Nazi ideology might have facilitated the racial integration of workplaces and set the stage for subsequent race-related policy reforms.[49] Government enforced anti-discrimination policies during and after World War II might have allowed black workers, including women, to enter lines of work that had previously excluded them.[50] The ascendance of the CIO (which split from the AFL in 1936) and its anti-discrimination policies might have effectively boosted industrial employment opportunities for black workers.[51] All of these factors may have opened doors for black workers in better paying jobs, leaving them significantly better off than before the war and in a stronger position to launch the Civil Rights revolution.

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[47] Wolfbein, "Postwar Trends," p. 664.

[48] Kryder, *Divided Arsenal*; Collins, "When the Tide".

[49] Klinkner and Smith, *Unsteady March*.

[50] Reed, *Seedtime*; Kersten, *Race*; Collins, "Race" and "Labor Market".

[51] Northrup, *Organized Labor*. See also Moreno, *Black Americans*.

Appendix 1. Data and Sample Description

The 1940 and 1950 data samples are drawn from the *IPUMS*. We exclude a number of workers to maintain consistent samples over time. The samples include workers between the ages of 18 and 64, who were not in school, in the Armed Forces, or self-employed (because non-wage income is not reported in 1940); who were not farmers, farm managers, or farm workers; who did not reside in institutional group quarters; and who worked more than four weeks in the previous calendar year.

For the decomposition analysis, the age categories group individuals as follows: 18 to 24, 25 to 29, 30 to 34, 35 to 39, 40 to 44, 45 to 49, 50 to 54, and 55 to 64 years old. The hours categories are no hours in the previous week (but with reported income for the previous year), 1 to 14 hours, 15 to 29, 30 to 34, 35 to 39, 40, 41 to 48, 49 to 59, and 60 or more hours. Categories for educational attainment pertain to those with less than five years, five to eight, nine to 11, exactly 12 years and more than 12 years of schooling. Occupational groups are professionals, operatives, laborers, household workers, other service workers, managers, sales persons, clerical workers, crafts persons, or newly employed (without an occupation in the previous year). Industrial groups are agriculture/forestry/fishing/mining/construction, durable manufacturing, nondurable manufacturing, transportation/communication/utilities, trade, finance/insurance/real estate, business and personal services, professional services, entertainment/recreation services, and public administration. In the regressions, we omit the category of unmarried women ages 35 to 39 with 9 to 11 years of schooling, who worked as non-durable manufacturing operatives for 31 to 40 hours in the week before the census and lived in the East North Central census division.

Appendix 2. Obtaining Counterfactual Wage Distributions

In equation (2), we illustrate how to construct a counterfactual wage distribution by setting *all* individual attributes to 1940 levels simultaneously. In the context of this paper's investigation, it is useful to partition the vector of individual characteristics, ($\boldsymbol{X}$, t_x), into four subsets, ($\boldsymbol{Z}$, t_z ; $\boldsymbol{E}$, t_e; $\boldsymbol{O}$, t_o ; $\boldsymbol{M}$, t_m) and sequentially apply new weights to the 1950 wage distribution. Let $\boldsymbol{Z}$ be a vector of individual attributes including eight age categories, six hours categories, and indicator variables for marital status and the presence of a child at home; $\boldsymbol{E}$ a set of five dummy variables for educational attainment; $\boldsymbol{O}$ 11 occupational and 10 industrial categories; and $\boldsymbol{M}$ a set of indicator variables for the nine census regions and metropolitan residence. As before, *t*, denotes a binary random variable for the year of observation (either 1940 or 1950) and the subscript indicates its relevance to each subset of characteristics.

Beginning with the observed 1950 wage distribution, we reweight each set of characteristics to reflect the distribution of those characteristics observed in 1940. We, first, reweight the distribution of personal characteristics, $\boldsymbol{Z}$; then the distribution of years of educational attainment, $\boldsymbol{E}$; then the distribution of occupations and industries, $\boldsymbol{O}$; and finally the regional and metropolitan distribution of workers, $\boldsymbol{M}$. At each step in this sequence, the new counterfactual distribution allows us to assess how changes in a subset of characteristics transformed the overall distribution of wages. The sequence of adjustments matters quantitatively because each subcomponent's contribution is measured in relation to the counterfactual distribution generated in the previous step and because we estimate the reweighting functions, which vary slightly depending upon the particular combination of variables included. We selected this particular sequence with the idea that we are first adjusting for changes in the worker's basic characteristics and education level (loosely speaking, these are "pre-market factors"), and then for how workers are sorted once in the labor market (occupationally, industrially, and geographically).

Using the same procedure as outlined in equations (2), we reweight the 1950 wage distribution using the following reweighting function:

$$\psi_z(z) = \frac{dF_{Z|E,O,M}(z \mid e,o,m,t_{z|e,o,m}=40)}{dF_{Z|E,O,M}(z \mid e,o,m,t_{z|e,o,m}=50)} = \frac{\Pr(t_{z|e,o,m}=40 \mid z,e,o,m)}{\Pr(t_{z|e,o,m}=50 \mid z,e,o,m)} \cdot \frac{\Pr(t_{z|e,o,m}=50 \mid e,o,m)}{\Pr(t_{z|e,o,m}=40 \mid e,o,m)}. \qquad \text{(A1)}$$

Similarly, we generate the counterfactual density of wages that would have prevailed if individual attributes *and* education were distributed as in 1940 by estimating the reweighting function,

$$\psi_e(e) = \frac{dF_{E|O,M}(e \mid o,m,t_{e|o,m}=40)}{dF_{E|O,M}(e \mid o,m,t_{e|o,m}=50)} = \frac{\Pr(t_{e|o,m}=40 \mid e,o,m)}{\Pr(t_{e|o,m}=50 \mid e,o,m)} \cdot \frac{\Pr(t_{e|o,m}=50 \mid o,m)}{\Pr(t_{e|o,m}=40 \mid o,m)}, \tag{A2}$$

and applying these estimates in conjunction with those for ψ_z to each observation in 1950. In the same manner, the counterfactual wage distribution that would have prevailed if individual attributes, education and occupation were observed as in 1940 can be obtained using estimates of the reweighting function,

$$\psi_o(o) = \frac{dF_O(o \mid m,t_{o|m}=40)}{dF_O(o \mid m,t_{o|m}=50)} = \frac{\Pr(t_o=40 \mid o,m)}{\Pr(t_o=50 \mid o.m)} \cdot \frac{\Pr(t_o=50 \mid m)}{\Pr(t_o=40 \mid m)}. \tag{A3}$$

Finally, the counterfactual wage distribution that would have prevailed if individual attributes, education, occupation, and geographic distribution had remained as in 1940 can be obtained using estimates of the reweighting function,

$$\psi_m(m) = \frac{dF_M(m \mid t_m=40)}{dF_M(m \mid t_m=50)} = \frac{\Pr(t_m=40 \mid m)}{\Pr(t_m=50 \mid m)} \cdot \frac{\Pr(t_m=50)}{\Pr(t_m=40)}. \tag{A4}$$

Thus, we estimate probits with successively fewer variables by race to obtain a weight for each individual observation in the 1950 distribution. We first apply the estimates of ψ_z to each observation in 1950 to obtain the first counterfactual density; then we apply the product of ψ_z and ψ_e; then the product of ψ_z, ψ_e, and ψ_o; and finally, the product of ψ_z, ψ_e, ψ_o, and ψ_m. Notice, this last product is mathematically equivalent to ψ_x in equation (3). The reweighted empirical distribution is used to estimate the counterfactual percentiles (presented in tables 2, 3, 5, 6 and 7) at each stage in the sequence.

Appendix 3: Log Weekly Wage Regressions by Race, 1940 and 1950

	White women		Black women	
	1940	1950	1940	1950
<=4 years	-0.177	-0.104	-0.193	-0.147
	[9.23]	[3.13]	[8.13]	[3.75]
5-8 years	-0.071	-0.067	-0.065	-0.058
	[12.48]	[5.50]	[3.87]	[2.17]
12 years	0.049	0.075	0.043	0.045
	[7.98]	[8.41]	[1.67]	[1.99]
13 or more years	0.251	0.2	0.22	0.179
	[22.43]	[15.96]	[6.52]	[4.17]
Married, spouse present	0.054	0.035	0.004	-0.033
	[9.39]	[5.48]	[0.30]	[2.53]
Child	-0.079	-0.05	-0.024	-0.007
	[10.72]	[8.57]	[2.61]	[0.46]
No hours worked	0.006	-0.099	-0.056	-0.088
	[0.24]	[4.54]	[1.38]	[1.39]
1-20 hours	-0.229	-0.456	-0.112	-0.407
	[21.05]	[28.29]	[5.50]	[10.66]
21-30 hours	-0.095	-0.183	-0.075	-0.167
	[11.51]	[11.16]	[5.16]	[7.14]
41-50 hours	-0.023	-0.032	0.042	-0.067
	[4.56]	[3.85]	[4.14]	[3.02]
50 hours	-0.074	-0.107	0.103	0.001
	[5.91]	[7.31]	[6.49]	[0.03]
<=25 years old	-0.32	-0.17	-0.194	-0.098
	[26.43]	[14.02]	[9.05]	[3.36]
25-29 years old	-0.131	-0.034	-0.1	-0.035
	[16.83]	[3.17]	[6.42]	[1.20]
30-34 years old	-0.035	-0.022	-0.025	0.004
	[4.85]	[2.05]	[1.79]	[0.18]
40-45 years old	0.027	0.026	0.006	0.024
	[3.41]	[2.29]	[0.33]	[0.93]
45-49 years old	0.026	0.026	0.044	0.005
	[3.61]	[2.00]	[2.00]	[0.14]
50-54 years old	0.028	0.028	0.047	-0.05
	[3.23]	[1.93]	[2.67]	[1.56]
55-65 years old	-0.029	-0.029	0.012	-0.092
	[3.16]	[1.61]	[0.50]	[3.52]
New England	0.013	-0.063	0.161	-0.063
	[0.58]	[2.38]	[11.22]	[0.96]
Middle Atlantic	0.052	0.018	0.109	0.015
	[1.22]	[0.36]	[2.53]	[0.26]
West North Central	-0.136	-0.075	-0.161	-0.243
	[4.62]	[3.51]	[5.64]	[6.17]
South Atlantic	-0.025	-0.032	-0.313	-0.333
	[0.96]	[1.34]	[3.63]	[4.45]
East South Central	-0.151	-0.154	-0.546	-0.551
	[7.97]	[6.81]	[7.83]	[11.94]
West South Central	-0.17	-0.119	-0.435	-0.39
	[9.12]	[4.73]	[14.23]	[8.81]

Mountain	-0.001	-0.011	0.09	0.145
	[0.03]	[0.29]	[0.91]	[1.13]
Pacific	0.112	0.082	0.2	0.133
	[3.82]	[3.46]	[10.72]	[3.44]
Lives in city	0.234	0.158	0.36	0.261
	[16.42]	[11.87]	[9.98]	[8.64]
Professionals	0.402	0.236	0.585	0.561
	[34.15]	[13.95]	[9.51]	[7.03]
Clerical	0.157	0.026	0.196	0.025
	[17.14]	[2.20]	[3.40]	[0.48]
Craft	0.155	0.083	-0.157	0.029
	[11.05]	[4.62]	[2.06]	[0.41]
Laborer	-0.036	0.005	0.056	-0.018
	[1.97]	[0.15]	[0.97]	[0.29]
HH Service	-0.508	-0.47	-0.315	-0.25
	[16.78]	[15.32]	[12.47]	[8.71]
Manager	0.244	0.141	-0.169	-0.371
	[7.71]	[5.95]	[1.15]	[2.94]
Sales	-0.015	-0.134	-0.017	-0.158
	[1.35]	[9.13]	[0.16]	[1.86]
Unemployed	-0.161	-0.112	-0.124	-0.152
	[9.71]	[3.38]	[2.25]	[2.00]
Not in labor force	-0.156	-0.111	-0.211	-0.17
	[5.68]	[1.93]	[1.75]	[0.75]
Service, not HH	-0.155	-0.194	-0.149	-0.034
	[14.24]	[14.14]	[4.84]	[1.31]
Ag, forest, fish; mining, construct.	0.011	-0.008	0.232	-0.195
	[0.50]	[0.19]	[4.58]	[1.55]
Durable manuf.	0.071	0.047	-0.027	-0.042
	[3.33]	[2.36]	[0.29]	[0.78]
Trans, comm.., utility	0.07	0.073	0.009	0.059
	[4.81]	[5.92]	[0.08]	[0.69]
Trade	-0.094	-0.094	-0.225	-0.171
	[7.78]	[7.31]	[2.64]	[2.93]
Finance, ins., real est.	-0.005	-0.089	-0.264	-0.155
	[0.46]	[7.52]	[2.53]	[2.54]
Business and pers. services	-0.159	-0.156	-0.297	-0.197
	[8.90]	[9.33]	[3.22]	[3.74]
Ent. and rec. services	-0.025	-0.142	-0.081	-0.142
	[0.47]	[3.21]	[0.72]	[1.44]
Prof. services	-0.049	-0.084	-0.169	-0.124
	[2.92]	[6.85]	[2.10]	[1.80]
Pub. Administration	0.106	0.045	-0.049	0.17
	[5.06]	[2.21]	[0.32]	[2.07]
No industry, but wages	-0.057	-0.098	-0.186	-0.222
	[3.41]	[2.43]	[1.68]	[0.93]
Constant	3.228	3.587	2.981	3.435
	[148.31]	[154.02]	[30.92]	[48.86]
Observations	86166	39597	12131	5413
R-squared	0.42	0.25	0.49	0.42

Notes: Robust t statistics are in brackets. Omitted categories are women ages 35-39 with 9-11 years of schooling who were working 31-40 hours per week as operatives in nondurable manufacturing and lived in the East North

Central Division in a non-metropolitan area.
Source: Microdata are from Ruggles, et al., *IPUMS*.

Appendix 4. Blinder-Oaxaca Decomposition Results, 1940-1970

	White Women			Black Women			Black-White		
	1940 to 50	1950 to 60	1960 to 70	1940 to 50	1950 to 60	1960 to 70	1940 to 50	1950 to 60	1960 to 70
Total change (mean)	0.282	0.168	0.144	0.548	0.223	0.392	0.266	0.055	0.248
Due to characteristics	0.029	-0.026	-0.016	0.101	0.063	0.12	0.072	0.089	0.136
	(0.103)	-(0.155)	-(0.111)	(0.184)	(0.283)	(0.306)	(0.271)	(1.618)	(0.548)
Age/married/kids/hours	*0.025*	*-0.023*	*-0.018*	*0.005*	*-0.017*	*0.002*	*-0.02*	*0.006*	*0.02*
	(0.089)	*-(0.137)*	*-(0.125)*	*(0.009)*	*-(0.076)*	*(0.005)*	*-(0.075)*	*(0.109)*	*(0.081)*
Education	*0.01*	*0.011*	*0.007*	*0.018*	*0.038*	*0.018*	*0.008*	*0.027*	*0.011*
	(0.035)	*(0.065)*	*(0.049)*	*(0.033)*	*(0.170)*	*(0.046)*	*(0.030)*	*(0.491)*	*(0.044)*
Occupation	*-0.004*	*-0.012*	*-0.003*	*0.034*	*0.010*	*0.085*	*0.038*	*0.022*	*0.088*
	-(0.014)	*-(0.071)*	*-(0.021)*	*(0.062)*	*(0.045)*	*(0.217)*	*(0.143)*	*(0.400)*	*(0.355)*
Region	*-0.002*	*-0.002*	*-0.002*	*0.044*	*0.032*	*0.015*	*0.046*	*0.034*	*0.017*
	-(0.007)	*-(0.012)*	*-(0.014)*	*(0.080)*	*(0.143)*	*(0.038)*	*(0.173)*	*(0.618)*	*(0.069)*
Due to wage structure	0.253	0.194	0.160	0.446	0.161	0.271	0.193	-0.033	0.111
	(0.897)	(1.155)	(1.111)	(0.814)	(0.722)	(0.691)	(0.726)	-(0.600)	(0.448)
Common wage structure	*0.253*	*0.194*	*0.16*	*0.341*	*0.100*	*0.188*	*0.088*	*-0.094*	*0.028*
	(0.897)	*(1.155)*	*(1.111)*	*(0.622)*	*(0.448)*	*(0.480)*	*(0.331)*	*-(1.709)*	*(0.113)*
Black-specific wage structure	---	---	---	*0.105*	*0.061*	*0.083*	*0.105*	*0.061*	*0.083*
	---	---	---	*(0.192)*	*(0.274)*	*(0.212)*	*(0.395)*	*(1.109)*	*(0.335)*

Notes: These results are for comparison with the DFL decomposition-based results in table 6. To establish comparability over the full 1940 to 1970 period, the sample and estimates for 1940 to 1950 in this table are identical to those used in table 6. However, they differ from those used elsewhere in the paper as follows. Because the number of weeks worked in the previous calendar year is only reported by categories in the 1960 or 1970 census, we generate our dependent variable by taking the log of the value obtained by dividing real annual wages by our imputation of weeks worked. We impute weeks worked using the race-specific category mean according to the 1950 census. We also cannot include the binary variable for metropolitan residence, because it is unavailable in 1960 and 1970. Finally, we expand the sample to include individuals who worked any weeks in the previous calendar year, because only categorical information on weeks worked is available for the 1960 and 1970 census. Other sample restrictions and variables remain as previously described (see notes to figure 1 and appendix 1).
Source: Microdata are from Ruggles, et al., *IPUMS*.

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Table 1. Average Observed and Adjusted Changes in Weekly Wages, by Race and Occupation, 1940-1950

	(1) Prop. in sample, 1950	(2) Wage change	(3) Col. 1 × Col. 2	(4) Adjusted wage change	(5) Col. 1 × Col. 4
Blacks					
Prof., clerical, manager, sales	0.125	0.377	0.047	0.265	0.033
Crafts, operative	0.188	0.485	0.091	0.375	0.070
Service	0.667	0.552	0.368	0.520	0.347
Laborer	0.020	0.385	0.008	0.287	0.006
Whites					
Prof., clerical, manager, sales	0.604	0.190	0.115	0.151	0.091
Crafts, operative	0.250	0.386	0.097	0.348	0.087
Service	0.139	0.451	0.063	0.406	0.056
Laborer	0.007	0.430	0.003	0.400	0.003

Notes: See notes to figure 1 for a description of the sample restrictions. The means are computed using sample weights. Column 4 reports an adjusted wage change that essentially nets out the influence of changes in characteristics within cells. See the text for a description of the calculation in column 4.
Source: Census microdata are from Ruggles, et al., *IPUMS*.

Table 2. Occupational Shifts by Race, 1910-1970

	1910	1920	1930	1940	1950	1960	1970
Black women							
Professional	1.6	2.6	3.5	4.4	6.0	8.0	12.4
Teacher	*1.3*	*2.1*	*2.8*	*3.4*	*3.7*	*4.5*	*5.3*
Other	*0.3*	*0.5*	*0.7*	*1.0*	*2.3*	*3.5*	*7.2*
Clerical	0.3	0.6	0.7	1.4	4.3	8.3	20.7
Craft	0.1	0.2	0.3	0.4	0.7	0.9	1.6
Operative	3.9	6.3	7.7	8.2	15.0	14.1	16.7
Manufacturing	*0.8*	*2.4*	*3.6*	*4.0*	*7.8*	*7.8*	*12.0*
Laundering	*0.7*	*1.5*	*2.7*	*2.3*	*4.9*	*4.2*	*2.3*
Other	*2.4*	2.5	1.5	1.9	2.2	2.1	2.4
Laborer	1.2	2.9	2.1	1.4	1.8	1.1	1.4
Service	46.9	53.4	62.6	68.0	61.3	61.6	42.2
Household	*44.0*	*44.6*	*52.0*	*58.0*	*41.7*	*38.3*	*17.1*
Not household	*2.9*	*8.8*	*10.6*	*10.0*	*19.6*	*23.4*	*25.1*
Manager	0.3	0.6	0.7	0.8	1.4	1.1	1.2
Sales	0.1	0.3	0.4	0.7	1.5	1.5	2.5
Farmers, farm labor	45.6	33.1	22.1	14.7	8.1	3.5	1.2
White women							
Professional	14.0	15.2	15.9	13.7	13.9	14.9	17.7
Teacher	*9.2*	*9.6*	*8.9*	*7.2*	*5.9*	*6.5*	*6.9*
Other	*4.9*	*5.6*	*7.0*	*6.5*	*8.0*	*8.5*	*10.7*
Clerical	11.6	23.5	27.1	25.5	32.3	35.6	37.5
Craft	1.7	2.1	1.8	1.5	1.8	1.5	2.0
Operative	25.9	22.1	18.7	22.2	20.6	17.2	14.5
Manufacturing	*15.5*	*15.7*	*14.3*	*17.8*	*16.8*	*14.5*	*11.9*
Laundering	*1.0*	*0.9*	*1.4*	*1.3*	*1.3*	*0.9*	*0.5*
Other	*9.4*	*5.6*	*3.1*	*3.1*	*2.5*	*1.9*	*2.1*
Laborer	1.5	2.1	1.7	1.1	0.6	0.5	0.9
Service	27.2	19.4	19.5	21.7	14.5	15.9	15.5
Household	*20.4*	*11.4*	*10.4*	*10.1*	*3.3*	*3.1*	*1.6*
Not household	*6.9*	*8.0*	*9.1*	*11.5*	*11.2*	*12.8*	*14.0*
Manager	2.4	2.8	3.2	4.0	4.6	4.3	3.6
Sales	6.1	7.5	8.5	8.4	9.2	8.8	7.7
Farmers, farm labor	9.5	5.2	3.7	2.0	2.5	1.4	0.7

Notes: The samples include all women from age 18 to 64 who are reported to be in the labor force at the time of the census and who have reported occupations. Occupational categories are based on the IPUMS "occupation 1950" coding scheme. The labor force concept prior to 1940 ("gainful worker") differs from the modern definition (for a discussion, see Goldin, *Understanding*, pp. 13- 16).

Source: Census microdata are from Ruggles, et al., *IPUMS*.

Table 3. Decomposing the Absolute Wage Gains of Women,
The Contribution of Changes in Worker Characteristics, 1940-1950

		Percentile				
	Mean	10	25	50	75	90
A. Black women						
Total change	0.567	0.441	0.608	0.664	0.590	0.580
Due to changes in characteristics	0.137	0.000	0.098	0.211	0.185	0.146
	(0.241)	(0.000)	(0.161)	(0.318)	(0.314)	(0.252)
Detailed changes in characteristics by subgroup						
Age/married/child/hours	*0.030*	*-0.059*	*0.000*	*0.061*	*0.047*	*0.082*
	(0.052)	*(-0.135)*	*(0.000)*	*(0.092)*	*(0.080)*	*(0.142)*
Education	*0.049*	*0.059*	*0.071*	*0.039*	*0.067*	*0.042*
	(0.086)	*(0.135)*	*(0.116)*	*(0.059)*	*(0.113)*	*(0.072)*
Occupation/industry	*0.041*	*0.000*	*0.027*	*0.092*	*0.071*	*0.003*
	(0.072)	*(0.000)*	*(0.045)*	*(0.138)*	*(0.121)*	*(0.006)*
Region/metro	*0.018*	*0.000*	*0.000*	*0.019*	*0.000*	*0.019*
	(0.031)	*(0.000)*	*(0.000)*	*(0.029)*	*(0.000)*	*(0.033)*
B. White women						
Total change	0.307	0.492	0.383	0.367	0.291	0.185
Due to changes in characteristics	0.058	0.125	0.054	0.052	0.040	0.032
	(0.188)	(0.254)	(0.141)	(0.142)	(0.137)	(0.173)
Detailed changes in characteristics by subgroup						
Age/married/child/hours	*0.024*	*0.035*	*0.016*	*0.028*	*0.001*	*0.022*
	(0.079)	*(0.070)*	*(0.043)*	*(0.077)*	*(0.003)*	*(0.122)*
Education	*0.033*	*0.045*	*0.038*	*0.024*	*0.039*	*0.029*
	(0.107)	*(0.092)*	*(0.098)*	*(0.067)*	*(0.135)*	*(0.156)*
Occupation/industry	*0.010*	*0.078*	*0.020*	*0.000*	*0.000*	*-0.007*
	(0.034)	*(0.159)*	*(0.052)*	*(0.000)*	*(0.000)*	*(-0.039)*
Region/metro	*-0.006*	*-0.033*	*-0.020*	*0.000*	*0.000*	*-0.012*
	(-0.020)	*(-0.067)*	*(-0.052)*	*(0.000)*	*(0.000)*	*(-0.065)*

Notes: The proportions of the total change are reported in parentheses. Sample restrictions are described in the notes to figure 1. The decomposition technique is described in the text and in appendix 2.
Sources: Census microdata are from Ruggles, et al., *IPUMS*.

Table 4. Decomposing the Absolute Wage Gains of Women, Including Changes in Wage Structure, 1940-1950

		Percentile				
	Mean	10	25	50	75	90
A. Black Women						
Total change	0.567	0.441	0.608	0.664	0.590	0.580
Due to characteristics	0.137	0.000	0.098	0.211	0.185	0.146
	(0.241)	(0.000)	(0.161)	(0.318)	(0.314)	(0.252)
Due to changes in wage structure	0.443	0.528	0.509	0.446	0.415	0.380
	(0.781)	(1.197)	(0.837)	(0.672)	(0.703)	(0.655)
Common wage structure	*0.342*	*0.424*	*0.404*	*0.344*	*0.336*	*0.310*
	(0.603)	*(0.961)*	*(0.664)*	*(0.518)*	*(0.569)*	*(0.534)*
Black –specific wage structure	*0.101*	*0.104*	*0.105*	*0.102*	*0.079*	*0.070*
	(0.178)	*(0.236)*	*(0.173)*	*(0.154)*	*(0.134)*	*(0.121)*
Residual	-0.013	-0.086	0.001	0.009	-0.011	0.054
	(-0.023)	(-0.195)	(0.002)	(0.014)	(-0.018)	(0.093)
B. White Women						
Total change	0.307	0.492	0.383	0.367	0.291	0.185
Due to characteristics	0.058	0.125	0.054	0.052	0.040	0.032
	(0.188)	(0.254)	(0.141)	(0.142)	(0.137)	(0.173)
Due to changes in wage structure	0.248	0.303	0.310	0.272	0.217	0.161
	(0.808)	(0.616)	(0.809)	(0.741)	(0.746)	(0.870)
Residual	0.002	0.064	0.020	0.043	0.035	-0.008
	(0.005)	(0.131)	(0.051)	(0.119)	(0.119)	(-0.044)

Notes: The proportions of the total change are reported in parentheses. Sample restrictions are described in the notes to figure 1. The decomposition technique is described in the text and in appendix 2.

Sources: Census microdata are from Ruggles, et al., *IPUMS*. The "due to characteristics" row is based on table 2's results.

Table 5. Decomposing the Relative Wage Gains of African-American Women, 1940-1950

		Percentile				
	Mean	10	25	50	75	90
Total Change (Black- White)	0.260	-0.051	0.225	0.297	0.299	0.395
Due to characteristics	0.079	-0.125	0.044	0.159	0.145	0.114
	(0.304)	(2.451)	(0.196)	(0.535)	(0.485)	(0.289)
Age/married/child/hours	*0.006*	*-0.094*	*-0.016*	*0.033*	*0.046*	*0.060*
	(0.023)	*(1.843)*	*(-0.071)*	*(0.111)*	*(0.154)*	*(0.152)*
Education	*0.016*	*0.014*	*0.033*	*0.015*	*0.028*	*0.013*
	(0.062)	*(-0.275)*	*(0.147)*	*(0.051)*	*(0.094)*	*(0.033)*
Occupation/industry	*0.031*	*-0.078*	*0.007*	*0.092*	*0.071*	*0.010*
	(0.119)	*(1.529)*	*(0.031)*	*(0.310)*	*(0.237)*	*(0.025)*
Region/metro	*0.024*	*0.033*	*0.020*	*0.019*	*0.000*	*0.031*
	(0.092)	*(-0.647)*	*(0.089)*	*(0.064)*	*(0.000)*	*(0.078)*
Due to changes in wage structure	0.195	0.225	0.199	0.174	0.198	0.219
	(0.750)	(-4.412)	(0.884)	(0.594)	(0.662)	(0.554)
Common wage structure	*0.094*	*0.121*	*0.094*	*0.072*	*0.119*	*0.149*
	(0.362)	*(-2.373)*	*(0.418)*	*(0.246)*	*(0.398)*	*(0.377)*
Black-specific wage structure	*0.101*	*0.104*	*0.105*	*0.102*	*0.079*	*0.070*
	(0.388)	*(-2.039)*	*(0.467)*	*(0.348)*	*(0.264)*	*(0.177)*
Residual	-0.015	-0.150	-0.019	-0.034	-0.046	0.062
	(-0.058)	(2.941)	(-0.084)	(-0.116)	(-0.154)	(0.157)

Notes: The proportions of the total change are reported in parentheses. Sample restrictions are described in the notes to figure 1. The decomposition is performed for blacks and whites in the order presented in the table and discussed in appendix 2.

Sources: Census microdata are from Ruggles, et al., *IPUMS*. Underlying decompositions for blacks and whites are reported in tables 2 to 4.

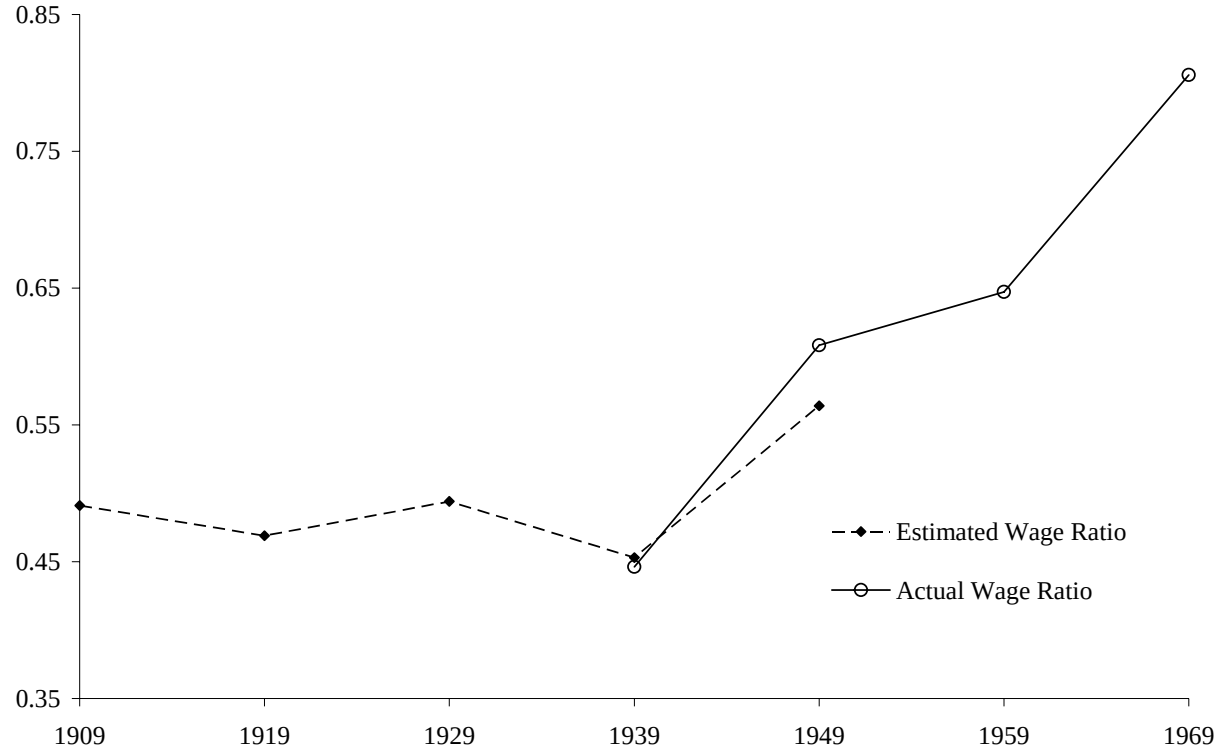
Table 6. Summary Decompositions of Racial Wage Convergence, 1940-1970

		Percentile				
	Mean	10	25	50	75	90
A. 1940 to 1950						
Total change (Black-White)	0.266	-0.013	0.167	0.254	0.319	0.387
Due to characteristics	0.077	-0.071	-0.059	0.116	0.147	0.092
	(0.289)	(5.462)	(-0.353)	(0.457)	(0.461)	(0.238)
Due to changes in wage structure	0.197	0.155	0.217	0.158	0.203	0.239
	(0.741)	(-11.923)	(1.299)	(0.622)	(0.636)	(0.618)
Common wage structure	*0.090*	*0.036*	*0.092*	*0.047*	*0.101*	*0.161*
	(0.338)	*(-2.769)*	*(0.551)*	*(0.185)*	*(0.317)*	*(0.416)*
Black-specific wage structure	*0.107*	*0.119*	*0.125*	*0.111*	*0.102*	*0.078*
	(0.402)	*(-9.154)*	*(0.749)*	*(0.437)*	*(0.320)*	*(0.202)*
Residual	-0.008	-0.096	0.009	-0.020	-0.030	0.058
	(-0.030)	(7.385)	(0.054)	(-0.079)	(-0.094)	(0.150)
B. 1950 to 1960						
Total change (Black-White)	0.055	-0.013	0.153	0.053	0.043	0.105
Due to characteristics	0.066	-0.055	0.109	0.042	0.054	0.040
	(1.200)	(4.231)	(0.712)	(0.792)	(1.256)	(0.381)
Due to changes in wage structure	-0.048	-0.004	-0.032	-0.052	-0.073	-0.041
	(-0.873)	(0.308)	(-0.209)	(-0.981)	(-1.698)	(-0.390)
Common wage structure	*-0.101*	*-0.096*	*-0.111*	*-0.096*	*-0.100*	*-0.060*
	(-1.836)	*(7.385)*	*(-0.725)*	*(-1.811)*	*(-2.326)*	*(-0.571)*
Black-specific wage structure	*0.053*	*0.092*	*0.079*	*0.044*	*0.027*	*0.019*
	(0.964)	*(-7.077)*	*(0.516)*	*(0.830)*	*(0.628)*	*(0.181)*
Residual	0.039	0.046	0.079	0.063	0.060	0.103
	(0.709)	(-3.538)	(0.516)	(1.189)	(1.395)	(0.981)
C. 1960 to 1970						
Total change (Black-White)	0.248	0.383	0.278	0.325	0.251	0.104
Due to characteristics	0.139	0.120	0.201	0.141	0.147	0.059
	(0.560)	(0.313)	(0.723)	(0.434)	(0.586)	(0.567)
Due to changes in wage structure	0.117	0.144	0.115	0.139	0.110	0.096
	(0.472)	(0.376)	(0.414)	(0.428)	(0.438)	(0.923)
Common wage structure	*0.028*	*0.051*	*0.025*	*0.041*	*0.027*	*0.028*
	(0.113)	*(0.133)*	*(0.090)*	*(0.126)*	*(0.108)*	*(0.269)*
Black-specific wage structure	*0.089*	*0.093*	*0.090*	*0.098*	*0.083*	*0.068*
	(0.359)	*(0.243)*	*(0.324)*	*(0.302)*	*(0.331)*	*(0.654)*
Residual	-0.007	0.121	-0.038	0.049	-0.006	-0.050
	(-0.028)	(0.316)	(-0.137)	(0.151)	(-0.024)	(-0.481)

Notes: To establish comparability over the full 1940 to 1970 period, the sample and estimates for 1940 to 1950 in this table differ from those used elsewhere in the paper as follows. Because the number of weeks worked in the previous calendar year is only reported by categories in the 1960 or 1970 census, we generate our dependent variable by taking the log of the value obtained by dividing real annual wages by our imputation of weeks worked. We

impute weeks worked using the race-specific category mean according to the 1950 census. We also cannot include the binary variable for metropolitan residence, because it is unavailable in 1960 and 1970. Finally, we expand the sample to include individuals who worked any weeks in the previous calendar year, because only categorical information on weeks worked is available for the 1960 and 1970 census. Other sample restrictions and variables remain as previously described (see notes to figure 1 and appendix 1).
Sources: Microdata are from Ruggles, et al., *IPUMS*.

Figure 1. Black-White Wage Ratio for Women, 1909-1969

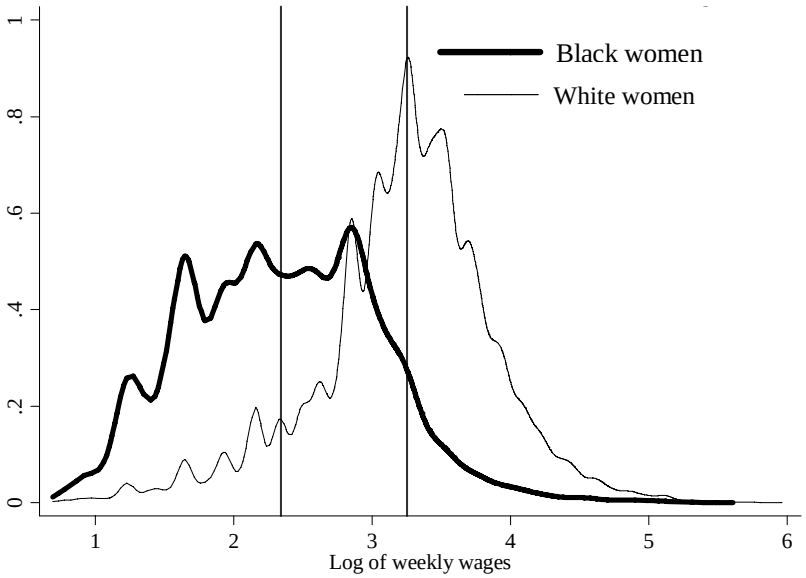


Notes: Both the sample for the estimated wage ratios as well as actual wage ratios include women, ages 18 to 64 who were not in school, who did not reside in group quarters, who did not work in agriculture or the military, and who did report an industry code. The actual wage ratio series is constructed to correspond to the sample used in the analysis. This sample also excludes women who were self-employed (only wage and salary income are reported in 1940, so self-employed workers generally do not have accurate income figures), relief workers from the 1940 sample, and workers reporting weekly wages 20 times above the minimum weekly wage or those earning less than 1/5 of the minimum wage on a weekly basis. The wages used in the actual wage series are adjusted for topcoding by multiplying top-coded values by 1.4. See equation 1 and the discussion in the text regarding the construction of the series of estimated wage ratios.

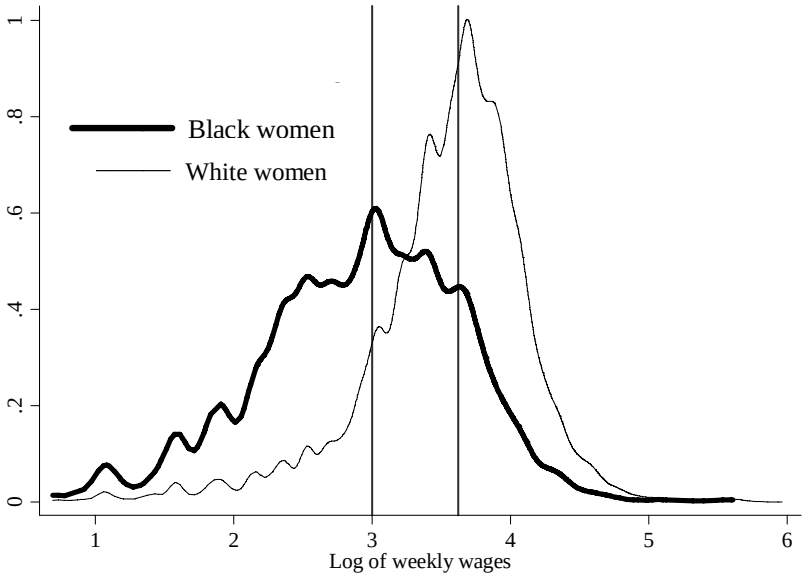
Sources: Actual wage ratios are computed using microdata from Ruggles, et al., *IPUMS*. The estimated wage ratios use the *IPUMS* and industry wage information from U.S. Department of Commerce, *Historical Statistics*.

Figure 2.
Kernel Density Estimates of the Distributions of Real Weekly Wages in 1940 and 1950 by Race

Panel A. Distributions in 1940



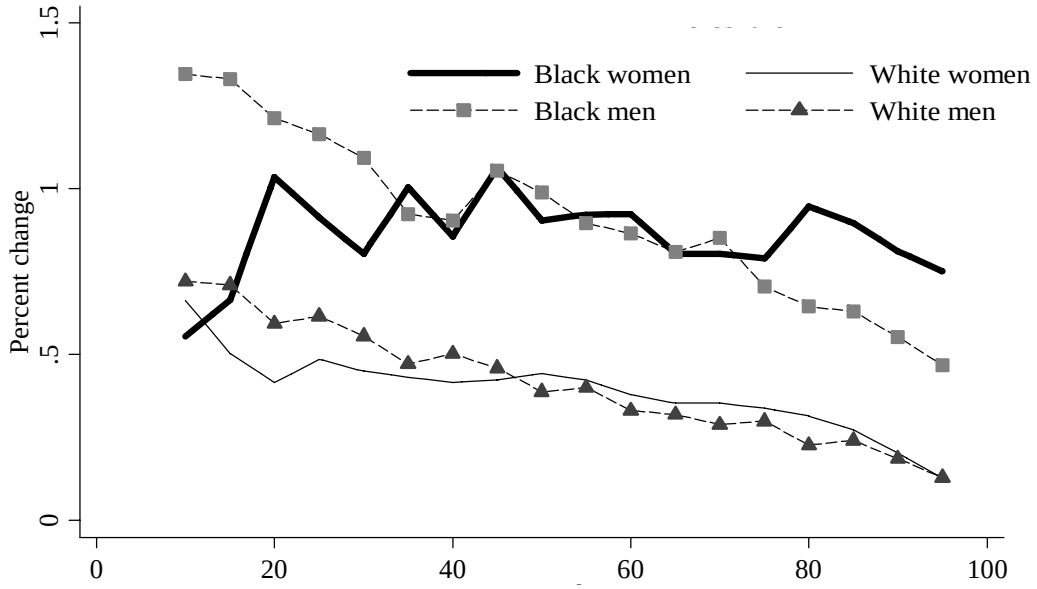
Panel B. Distributions in 1950



Notes: Observations are from the 1940 and 1950 census, and income pertains to the previous calendar year. Estimates are obtained using a Gaussian kernel. The wage observations are adjusted for topcoding by multiplying top-coded values by 1.4 and are expressed in 1949 dollars. The samples include workers between the ages of 18 and 64, who were not in school, in the Armed Forces, or self-employed (because non-wage income is not reported in 1940); who were not farmers, farm managers, or farm workers; who did not reside in institutional group quarters; and who worked more than four weeks in the previous calendar year. In 1940, only wage and salary income are reported, and self-employed (including farmers) generally do not have accurate income figures. For consistency, we exclude workers who are not classified primarily as wage and salary workers in both 1940 and 1950. We also exclude relief workers from the 1940 sample and observations with weekly wages 20 times the minimum weekly wage or less than 1/5 the minimum wage on a full-time, weekly basis.

Sources: Microdata are from Ruggles, et al., *IPUMS*.

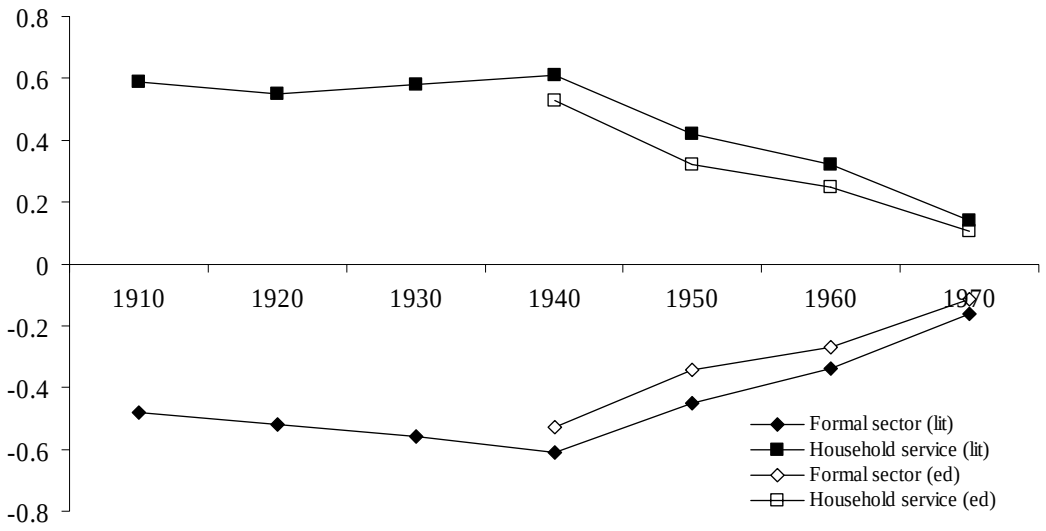
Figure 3. Percent Change in Real Weekly Wages by Percentile, 1940-1950



Notes: Percentage change in real weekly wages is computed as the change in the weekly wage at a given percentile divided by the 1940 weekly wage at that percentile. Sample includes individuals between the ages of 18 and 64, who were not in school, in the Armed Forces, or self-employed; who were not farmers, farm managers, or unpaid family farm workers; who did not reside in institutional group quarters; and who worked more than four weeks in the previous calendar year. For consistency, we exclude workers who are not classified primarily as wage and salary workers in both 1940 and 1950. We also exclude relief workers in 1940. In 1950, only sample line workers have their income data reported. Extreme outliers are omitted.

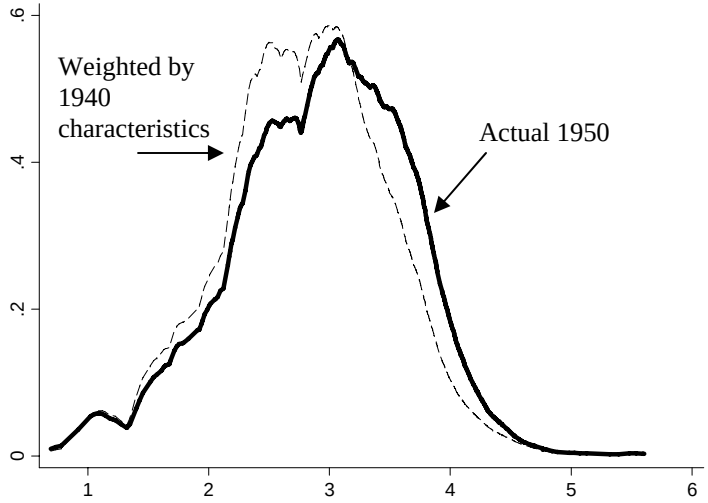
Sources: Microdata are from Ruggles, et al., *IPUMS*.

Figure 4. Black-White Difference in Likelihood of Formal Sector and Household Service Employment, 1910-1970

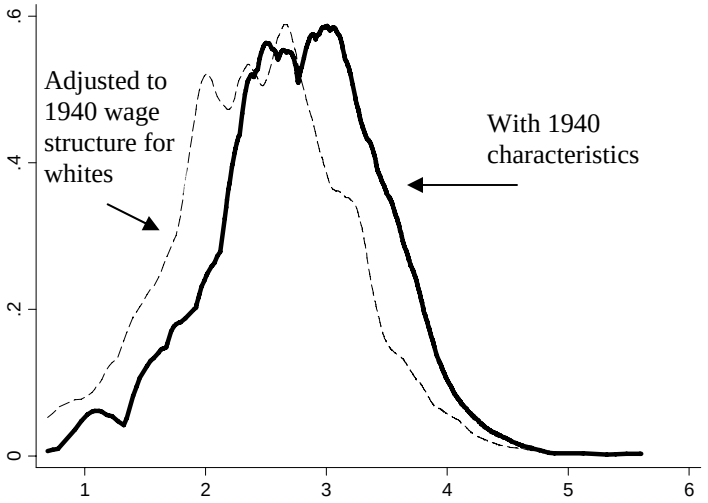


Notes: Each point is from a separate regression and represents a coefficient on a dummy variable for race (black = 1) evaluated at the sample mean using a probit specification. The "formal sector" regressions use samples that include all women, ages 18-64, who reported occupations; the dependent variable equals one if the occupation was neither agricultural nor domestic service. Negative coefficient values imply that black women were less likely than similar whites to work in the formal sector. The "household service" regressions are from samples that include only non-agricultural workers, ages 18-64; the dependent variable equals one if the occupation is household service. Positive coefficient values imply that black women were more likely than similar whites to work in domestic service. The series that range from 1910 to 1970 control for age (eight categories), marital status, child at home, literacy, region and residence in a metropolitan area. The metropolitan residence variable is unavailable for some observations in 1960 and 1970, but results are similar with alternative specifications of the urban residence variable that do not omit those observations. The series that range from 1940 to 1970 control for educational attainment (five categories) rather than literacy. Results are similar if samples are further restricted on the basis of employment status variables. *Sources*: Microdata are from Ruggles, et al., *IPUMS.*

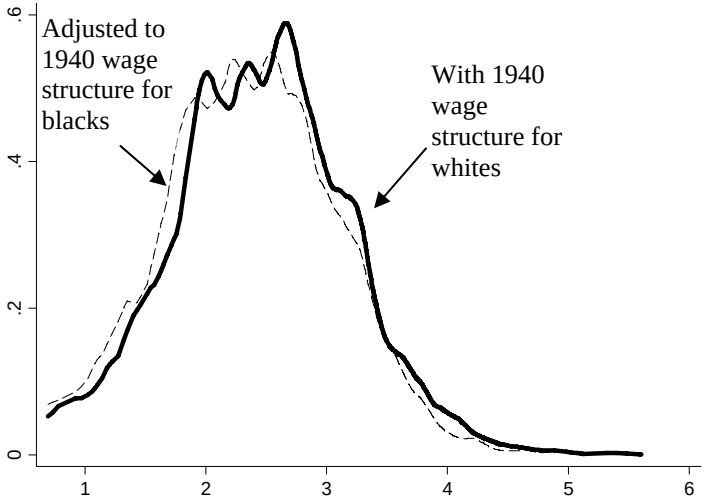
Figure 5. Decomposing the Wage Gains of African-American Women, 1940 - 1950



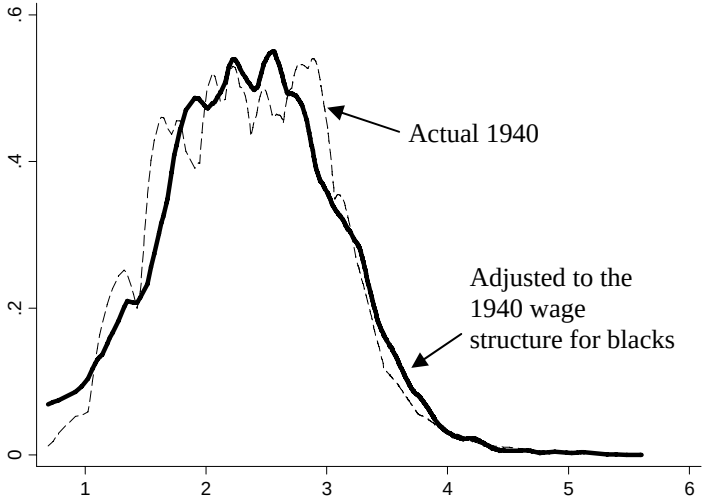
A. Weighted by the distribution of characteristics in 1940



B. Adjusted for changes in common wage structure



C. Adjusted for differential changes in the black wage structure



D. Residual differences

Notes: Please refer to the notes in figure 2 for the sample description. This figure is a visual representation of the decomposition of the changes in the log of real weekly wages (i.e., changes in log points) among African-American women from 1940 to 1950.