

**FROM SERVANTS TO SECRETARIES:  
THE OCCUPATIONS OF AFRICAN-AMERICAN WOMEN, 1940-1980**

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**ABSTRACT**

This paper examines changes in the occupations of African-American women during the period 1940-1980 using U.S. Census samples, with an emphasis on the breakthrough of black women into clerical work. In contrast with some previous studies, my results indicate that increased educational attainment played a significant role in opening black opportunities for clerical jobs. But changes in education still explain less than half of the overall increase in probability of a clerical job, suggesting that declining discrimination may also have been important. Employing an illustrative tipping model of endogenous discrimination, the paper argues that a range of historical forces might have tipped the labor market toward an equilibrium with less employment discrimination. Some preliminary evidence suggests a potential role for public employment and the educational qualifications of the black labor pool.

Empirical studies of the relative economic progress of African-Americans during the postwar period have focused largely on the experience of men. The case of female workers has been much less studied, but it raises a number of unique and important issues. For one thing, the economic status of blacks and whites converged much more completely for women than for men. Given recent pessimism about the economic status of many African-Americans, particularly in poor urban neighborhoods, it is easy to overlook the economic success story of black women over the postwar period. Between 1940 and 1980, the average pay of black female workers went from less than 40 percent of the white female average to near parity. In fact, controlling for education levels, black women in 1980 were paid on a par with white women (Cunningham and Zalokar 1992).

A second distinguishing feature of the work experience of women is that occupational segregation and desegregation played a much larger role for women than it did for men in determining racial differences in the labor market. It does not stretch the truth by very much to summarize the progress of black women in the labor market during these decades as a transition “from servant to secretary.” In 1940, fully 58 percent of black female workers were domestic servants; by 1980 this percentage had dwindled to 6.2. Meanwhile, clerical work, which constituted the single most important occupational category for white women throughout the period, employed less than 2 percent of black working women in 1940.

By 1980, clerical work had become the single largest occupational category for black women (and whites as well), employing 29 percent of black female workers (Cunningham and Zalokar 1992). Although in the year 2000 we are not inclined to view clerical work as particularly prestigious or high paying, for black women who had traditionally been restricted to menial service or agricultural jobs the transition constituted a dramatic improvement in economic opportunity. Cunningham and Zalokar (1992) show that occupational segregation was a major factor contributing to the black-white earnings differential for women in 1940 and 1960, and that subsequent convergence in earnings reflected racial convergence in the occupational distribution.

This paper focuses on the occupational transition of black women into clerical work during the postwar period, with an emphasis on the role of changing educational attainment and declining labor-market discrimination. Previous studies of the “breakthrough” of black women into the clerical labor market have largely discounted the role of human capital (e.g. Cunningham and Zalokar 1992; King 1993, 1995). Much of the transition occurred rapidly between 1960 and 1970, and standard statistical techniques suggest that almost none of the change was due to racial convergence in the quantity (years) of schooling.<sup>1</sup> King (1995, p. 291), for example, estimates that only about one-sixth of the increase in the proportion of black women in clerical work between 1940 and the 1980s can be attributed to “improved human capital.” Much of the change, it is claimed, must be explained by other factors, such as anti-discrimination policy, public employment, and a shortage of white clericals.

I find that previous studies have underestimated the importance of improving educational attainment in the breakthrough of black women into clerical work. Using Census data, I estimate that increased years of education account for roughly 35-40 percent of the increase in percentage clerical between 1940 and 1980. Educational opportunity was important, although my estimate still leaves the majority of the change unexplained by conventional measures of human capital. I also find that improvements in education played a smaller role in the decline of domestic service.

What accounts for the large residual change in occupations? There can be little doubt that labor-market discrimination was a significant factor excluding black women from clerical work prior to the 1960s. Goldin (1990, p. 147) notes that in 1940 nearly half of the employers surveyed in the federal Women’s Bureau study of office work stated that they had a written or unwritten rule barring the hiring of black office workers (see also Strom 1992, pp. 299-303). This included firms in northern as well as southern cities. As I show below, even black women who had completed high school were very unlikely

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<sup>1</sup> The 1960s were also a decade of significant economic progress for black men, leading some to emphasize the role of the civil rights movement and equal employment legislation: see Donohue and Heckman (1991). The literature on women echoes the emphasis of Donohue and Heckman on the “episodic” rather than continuous nature of these changes.

to hold a clerical job in 1940.

The apparent rapidity of black women's breakthrough into clerical jobs during the 1960s has led Mary King (1993) to describe it as a case of "occupational tipping." Recent work by economists on social norms, beliefs, preference falsification, and information cascades are all consistent with the possibility that shocks to a system of racial discrimination could tip the equilibrium behavior of a large percentage of white employers, employees, and customers. From this perspective, some percentage of the white population may have had deeply held beliefs about African-American inferiority, but many others may simply have found it convenient or cost-efficient to "go along" with these beliefs, given what everyone else was doing. Changes in information or the relative costs and benefits of maintaining the beliefs or following the norms could result in a bandwagon effect in the direction of declining discrimination. The role of such "tipping" in racial beliefs (or expressed beliefs) during the Civil Rights era was emphasized by Gavin Wright in his recent presidential address to the Economic History Association (Wright 1999).

The tipping model is attractive because it offers a way to account for the seemingly discontinuous change in employment patterns. Yet this virtue comes at a cost. Because systems that exhibit tipping between multiple equilibria are by definition sensitive to small shocks, the historian faces the challenge of identifying which small shocks pushed the system over the edge. Indeed, the tipping model, far from offering an alternative to the human capital story, may complement it. For example, if a high-school diploma was the basic qualification for clerical work during the postwar period, the tip away from the discriminatory equilibrium might have commenced once there was a critical mass of black women holding such a qualification. Standard econometric techniques for estimating the impact of schooling may be ill suited to identifying this effect.

As a preliminary attempt to shed some light on the historical factors that may have initiated the breakdown of the discriminatory equilibrium, I examine variation across states in the change in probability that a black working woman held a clerical job, after controlling for measured human capital.

During the 1960s, states that experienced rapid growth of public employment and those that started the decade with a more educated black workforce saw larger increases in the proportion of blacks in clerical work. For various reasons these results are subject to question, but they point toward areas for further research.

### **Educational and occupational progress of black women, 1940-1980**

The progress of black women's wages and occupational status during the period under study has been well documented, in particular by Cunningham and Zalokar (1992), and I only touch on some highlights here, with special reference to clerical workers. The core data used in this section consist of all white and black women (18 and older) in the IPUMS Census samples for 1940, 1960, 1970, and 1980, and the "sample-line" women in 1950.<sup>2</sup> I use only the sample-line individuals in 1950 because educational attainment is available only for those individuals. All statistics are weighted using the applicable person weights in order that the numbers be representative of the U.S. population.

Figures 1 and 2 show the basic occupational trends that inspired the title of this paper. The decline of domestic service from being the dominant occupation for black women in 1940 to a nearly trivial percentage in 1980 is evident in Figure 1. Figure 2 shows the growth of clerical work among black women, with the notable jump between 1960 and 1970.<sup>3</sup>

Figure 3 tracks the percentage clerical for cohorts of black female labor force participants over this period. The line labeled "1930," for example, shows the percentage of black women in the labor

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<sup>2</sup> Ruggles and Sobek (1997). For most of the figures in this section I use the Form 1 Metro sample of the 1970 Census.

<sup>3</sup> These figures refer to all clerical occupations according to the 1950 census definitions. Finer disaggregation of the clerical category would reveal that there were significant racial differences in the distribution of women among the various clerical occupations, with black women more highly represented in the lower-paid clerical jobs, such as typist or file clerk. See for example O'Connell (1979), pp. 59-61.

force who reported clerical occupations among those who were ages 15-24 in 1930.<sup>4</sup> The increased representation of black women in clerical work was clearly the consequence of both within-cohort and between-cohort changes. Between 1960 and 1970, each cohort of black women shows an increased percentage clerical. But the cohort profiles are also shifting up over time, with an especially dramatic shift between the cohort entering in 1960 and the one entering in 1970.

A reasonable conjecture to explain the cross-cohort increases in percentage clerical would be increases in the quantity and quality of education for black women. Completion of high school was apparently an important qualification for clerical work for both races. This is evident in Figure 4, which tracks the percentage of clerical workers who had at least completed high-school. This percentage rises a little bit over time, but even as early as 1940 a high-school diploma was the norm.<sup>5</sup> There is very little difference between whites and blacks in this diagram, despite the considerably lower educational attainment of black women over most of the period.

Figures 5 and 6 show two measures of educational attainment by race. In Figure 5, the dashed lines indicate the percentage of white women in the labor force who reported completing exactly 12 years of school (squares), and more than 12 years of school (circles); the solid lines are the corresponding percentages for black women. Figure 6 shows the same series, but is restricted to women ages 25-34. By focusing on a younger age group, Figure 6 gives a better indication of the educational background of entering cohorts. It is also less vulnerable to the overreporting of educational attainment that Goldin (1998) finds among older individuals in the 1940 Census.

Clearly, by 1980 these measures of educational attainment of black women had nearly converged at the margin (among entering women) with those of white women. This would appear to be consistent

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<sup>4</sup> The age categories are all 10-year groups (e.g. 25-34) with the exception of the youngest, which is 18-24, and the oldest, which is 65 and up.

<sup>5</sup> A survey of office managers and personnel directors conducted by the American Management Association during the 1950s found that more than 95 percent of approximately 300 responding firms required at least a high school education for typists, file clerks, and secretaries (Mandell 1956, p. 60).

with the upward shifts in the cohort lines revealed in Figure 3. Yet these cohort shifts occurred even within narrowly defined educational groups. For example, Figure 7 replicates Figure 3, but restricts the sample to women who reported completing exactly 12 years of school. While the between-cohort shifts are compressed somewhat compared with those for all workers, they are still substantial. The jump between the cohort entering in 1960 and the one entering in 1970 is still dramatically large.

### **The contribution of education and location to occupational change**

Data such as those reviewed in the preceding section have led a number of researchers to conclude that the “human capital” model of black economic progress, whereby convergence in education drives convergence in the labor market, holds little promise for explaining the economic progress of black women. Not only was there substantial progress within cohorts, which presumably share a relatively fixed level of educational attainment, but the substantial progress across cohorts is apparent even when educational attainment is held constant.<sup>6</sup>

Increases in years of education actually made a more substantial contribution to black women’s move into clerical work than has been appreciated. The studies by Cunningham and Zalokar (1992) and King (1993, 1995) often compare black and white occupational distributions at various points in time using a variant of the Blinder-Oaxaca decomposition. But a more direct way to quantify the impact of education on black occupations is to examine whether changing black educational attainment explains the changing occupational composition of black women, given the relationship at any point in time between education and occupation.<sup>7</sup> I focus here on the changing percentages of female black workers who were

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<sup>6</sup> Actually, there were some changes in reported educational attainment within cohorts after 1940, in particular for black women between the age groups of 18-24 and 25-34. This may reflect the growing importance of the GED.

<sup>7</sup> King (1995) performs such an exercise, using logit estimates from 1940 to predict percentage clerical in 1988, finding little impact of changing educational attainment. Her 1940 sample for black women is quite small, however, and her specification of the education effect differs from the more flexible specification I employ below.

clerical workers or domestics.

I use a decomposition based on cross-section linear probability regressions of the probability clerical (or domestic) among black female workers.<sup>8</sup> The data are IPUMS samples for each census year, 1940-1980, using all black females satisfying the following criteria: ages 20-59, nonfarm residence, in the labor force, and reporting an identifiable occupation. Only sample-line individuals are used in 1950, and the form 1 state sample (5%) is used for 1970. I report results for two alternative specifications.<sup>9</sup> The first (Model 1) includes as regressors 10-year age categories, individual dummies for each year of education (1 through 17+), and dummies for census division of residence.<sup>10</sup> If  $y_i$  is a dummy variable equal to one for a woman holding a clerical job, and indexing age with  $a$ , education with  $e$ , and region of residence with  $r$ , Model 1 can be written as:

$$y_{iaer} = \alpha_a + \alpha_e + \alpha_r + \varepsilon_{iaer}$$

Figure 8 plots the effect of education on probability clerical implied by the education coefficients from Model 1 for 1960.<sup>11</sup> The relationship between educational attainment and proportion clerical is obviously highly nonlinear, remaining fairly constant until the 11<sup>th</sup> grade, reaching its peak with one or two years of college, and declining for those with more college education.<sup>12</sup> Consistent with this pattern,

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<sup>8</sup> This paper ignores the difficult issue of labor force participation and the potential sample-selection problems it introduces. The participation rates of black women increased over the period considered here, although to a smaller degree than did the participation of white women.

<sup>9</sup> Coefficients and statistics for both specifications are reported in an appendix.

<sup>10</sup> I also estimated Model 1 as a logit. The variable effects are quite similar to those from the linear model, and the predicted probabilities from the logit and linear models are highly correlated:

Year	1940	1950	1960	1970	1980
Correlation	0.92	0.92	0.94	0.97	0.99

<sup>11</sup> This plot assumes a woman ages 30-39 residing in the Middle Atlantic division.

<sup>12</sup> Heckman et al (1999) find that the relationship of education to earnings for black and white men is also highly nonlinear. In this case the diagram reflects the importance of the high-school diploma in qualifying for clerical work, and presumably the opportunity for professional careers with education beyond two years of college (e.g., teaching).

in each year a far more parsimonious specification of education fits just as well: namely, using four education-level dummies corresponding to 11, 12, 13-14, and 15+ years of education. This specification of education is used in Model 2, which also includes the 10-year age categories and dummies for census division of residence. In addition, Model 2 adds dummies for census division of birth and interactions of the education dummies with both the residence dummies and the birthplace dummies.<sup>13</sup> Indexing division of birth with b, Model 2 can be written as:

$$y_{iaerb} = \alpha_a + \alpha_e + \alpha_r + \alpha_b + \alpha_{er} + \alpha_{eb} + \varepsilon_{iaerb}$$

The education-location interactions in Model 2 allow it to capture potential differences in the return to education by current residence and birthplace. To the extent that educational quality differed systematically across census divisions, and individuals were often educated in the division of their birth, the education-division of birth interactions should pick up some of the impact of school quality on probability of a clerical job.<sup>14</sup>

The decomposition breaks the change in proportion clerical (q) between any two consecutive census years into three components: the first holds the coefficients constant and changes the Xs, the second holds the Xs constant and changes the coefficients, and the third is a residual term:

$$\Delta q = b \cdot \Delta \bar{X} + \Delta b \cdot \bar{X} + residual$$

where b is the vector of estimated coefficients and  $\bar{X}$  is the vector of means of the regressors. For the first two terms one has the choice of holding the bs or Xs constant at their values for the initial year or for

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<sup>13</sup> Because few blacks were born or resided in the Mountain division during these years, I combine the Mountain and Pacific census divisions. Thus there are 7 dummies each for division of birth and division of residence, 4 dummies for education, and 28 dummies each for the interactions of education and division of residence and education and division of birth.

<sup>14</sup> This paper follows Card and Krueger (1992), Heckman et al (1999), and others in using education-birthplace interactions to capture potential variation in school quality.

the end year of the pair. There is no reason to prefer one base year to the other, and I report the results both ways.

Table 1 gives the decomposition results for the percentage clerical. The top panel reports results for Model 1, and the bottom for Model 2. The rows labeled TOTAL show the total decadal change in percentage clerical. The results for Model 1 indicate that changing educational attainment played a significant role in the increased percentage of black women holding clerical jobs. Summing over the whole 40-year period, changing characteristics account for 11 or 14 percentage points of the total change of 28 percent, or 40-50 percent of the change depending on which base year is used. Changes in educational attainment alone account for 36 or 41 percent of the change. During the decade of greatest change, the 1960s, changes in education accounted for 3.4 or 4.5 percentage points of the total change of 12.8 percentage points.

Adding variables for place of birth and the education-location interactions (Model 2) increases the importance of education somewhat during the 1960s, but the overall contribution of education remains quite similar. Changes in the coefficients (the “prices” of personal characteristics) are clearly an important part of the story as well, accounting for at least half the overall change in proportion clerical over the four decades.

While education played a substantial role in expanding black women’s access to clerical employment, it apparently played a smaller role in the decline of domestic service as a dominant occupation. Table 2 presents decompositions analogous to Table 1 for a linear probability model of the probability of holding a personal or household (domestic) service occupation. The dramatic reductions in the percentage domestic during the 1940s and 1960s are largely unexplained here (i.e., due to shifts in the coefficients), whether Model 1 or 2 is used. Over the 40-year period, improving educational attainment can account for about a quarter of the overall decline in Model 1, whereas in Model 2 changes in education have a negligible effect.

The decomposition results here suggest that the role of education in improving black women’s

opportunities after 1940 was complex and may have been underestimated in previous studies. Education was important if not decisive in opening up opportunities for blacks in the single most important occupation for women, clerical work. Education played a less important role in the decline of domestic work among black women. Studies that examine general indicators of occupational change (such as an index of occupational segregation) will obscure these details.

### **Patterns of occupational change among cohorts of high-school educated black women**

The measures of educational attainment used in Model 2 control for school quality only to the extent that it was correlated with census division of birth. This is undoubtedly only a crude control.<sup>15</sup> Although King (1995) raises important doubts about the significance of relative improvements in school quality in explaining women's occupational progress, the issue is subtle in the case of clerical work and worthy of further inquiry. By the 1930s, commercial education had become an important component of the public high school curriculum, and one that was increasingly focused on preparing young women for clerical work. In public schools attended by blacks, however, preparation for such jobs was largely excluded from the curriculum, even in the North (see Weiss 1978; Anderson 1988; Strom 1992). Whether the move toward equal education for blacks entailed not only increased access and school quality but also convergence in the commercial curriculum is a topic for further study.

One way to control more thoroughly for the effects of both the quantity and quality of school is to track the occupational distribution of cohorts of black women who all had the same number of years of school and who were born in the same region of the country. Tables 3(a-c) and 4(a-c) track the percentage of workers who were clericals and domestics respectively, for birth cohorts of black women who reported completing exactly 12 years of school. In each table, panel (a) tracks cohorts born outside

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<sup>15</sup> In this regard the estimates may underestimate the contribution of changing school quality, although on the other hand there may have been other factors correlated with birth region, such as family background or migrant status, that would lead to the education-birthplace coefficients overestimating the impact of school quality.

the South, panel (b) tracks cohorts born in the South but residing outside the South at the time of the census, and panel (c) tracks cohorts born in the South and residing in the South.<sup>16</sup>

Although the sample sizes are rather small for the earlier years, some consistent patterns emerge. Following the cohorts across the rows in Table 3(a) reveals that the breakthrough into clerical work for high-school educated black women born outside the South came in the 1950s rather than the 1960s for each cohort. Between 1960 and 1970 not one of these cohorts experienced a significant increase in the percentage clerical, although the younger cohorts were much more likely to have a clerical occupation.

Tables 3(b) and (c) indicate different timing for southern-born women, the largest within-cohort increases in percent clerical taking place during the 1960s. The success that cohorts of high-school educated black women had breaking into clerical work in the South during the 1960s is consistent with the notion that the civil rights movement and equal employment opportunity laws opened up previously all-white occupations within the South. Indeed, dramatic shifts in the racial pattern of employment are an important piece of evidence in Donohue and Heckman's (1991) case for "episodic" change in black economic status. Yet it is puzzling that the earlier success of northern-born women during the 1950s was not experienced by southern-born women residing outside the South until the 1960s (compare Tables 3(a) and 3(b)). Perhaps the difference lies in the fact that many more of the southern-born women living outside the South would have been recent migrants in 1960 than in 1970, with fewer market network connections.

Table 4(a-c) shows the percentage of high-school educated black working women who were domestics. The percentage fell dramatically between 1940 and 1950 for all three groups, and continued to decline for cohorts of women residing outside the South (a and b) for the next 20-30 years. For black women living in the South, however, progress stagnated during the 1950s. In 1960, as in 1950, about a third of high-school educated black working women (both young and old) were domestics.

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<sup>16</sup> The women born outside the South are not further separated by region of residence because almost all of them resided outside the South.

To summarize the results reported in this section and the preceding, increased human capital, as measured by years of schooling, explains a sizeable chunk of the increased proportion of black women who entered clerical work between 1940 and 1980. A larger chunk remains unexplained by measured characteristics. The experience of cohorts of high-school educated women reveals interesting differences by region of residence: the critical importance of the 1960s is seen to be in large part a southern phenomenon. What historical factors precipitated the dramatic changes in labor-market opportunities for black women in the South during that decade? And must we look for dramatic events that can be temporally linked to the observed changes? The following section suggests that models of “endogenous discrimination” implicate a wide range of potential causal forces.

### **Endogenous discrimination and occupational tipping**

The “episodic” nature of the progress of African-Americans in the labor market has led a number of scholars to question the human capital explanation of that progress, which attributes the changes primarily to relative improvements in the quantity and quality of schooling for blacks. The case of black women’s breakthrough into clerical work during the 1960s is particularly dramatic. Compared with the swift flow of events in the labor market during the 1960s, the aggregate supply of human capital would appear to advance at a glacial pace, requiring the entry of successive cohorts of better educated workers. I have shown that although educational attainment is not an insignificant contributing factor, much of the change remains unexplained.

Alternative accounts of black economic progress generally place a greater emphasis on labor-market discrimination and its demise. In one story, government anti-discrimination efforts forced employers to hire blacks in spite of a taste for discrimination on their own part or the part of their white workers and customers. An alternative view, put forth in recent work by James Heckman, Gavin Wright, and others, is that discrimination is endogenous, contrary to the simple version of the Becker discrimination model. During the important episodes of relative black economic progress, specific

historical factors set into motion a tipping or bandwagon phenomenon that led an increasing proportion of white employers to hire black workers into jobs or industries from which they had been previously excluded. Important historical factors may have included not only anti-discrimination laws and interventions by government, but also tight labor-market conditions (often associated with wartime booms), and increases in public employment.

In what sense is discrimination endogenous? In the Becker (1971) model, discrimination originates in individual tastes for treating different groups differently. Of course, preferences may be mutable; a theory of endogenous discrimination based on changes in preferences would have to model individual preference formation. Alternatively, discrimination may be thought of as a set of norms or beliefs that characterize a particular social equilibrium. For example, in his presidential address, Wright (1999) cites Timur Kuran's (1995) theory of "preference falsification." While some whites may have held sincerely bigoted beliefs about blacks, others may merely have gone along in order to avoid the ostracism of their peers. George Akerlof's (1980) theory of social norms has a similar structure. Norms are constraints on choice that are enforced by costs that members of the community impose on transgressors.

Norms that constrain behavior or public expression are not the only mechanism whereby racial discrimination could be endogenous. Discrimination has often been justified on the grounds of perceived differences in the characteristics or qualifications of black versus white workers. What are the sources of information regarding racial attributes? It seems likely that many white employers formed their beliefs about black workers' attributes on the basis of extremely limited and potentially biased information. Historically, many firms did not hire blacks at all, even when they had access to substantial pools of black labor, and so they may have had no direct experience with black workers whatsoever. Under such conditions, employers faced a choice between risky experimentation with employing black workers on the one hand and relying on word of mouth or the observed choices of other employers on the other. In such situations it is possible that a large fraction of agents would choose imitation in favor of

experimentation, resulting in an “information cascade” (Bikhchandani, Hirshleifer, and Welch 1998).

Warren Whatley (1990) presents historical evidence that employers could be forced by tight labor market conditions to alter this strategy and experiment with employing black workers.

In the remainder of this section, I present a simple tipping model of endogenous discrimination in a market for labor that incorporates demand and supply conditions. In the model, discrimination is a social norm enforced by sanctions against firms that employ black workers. The nature of the sanctions is left vague, but I assume that different employers may feel the effects of the sanctions differently. This may be interpreted as differences in the taste for discrimination or distaste for ostracism. The model demonstrates that once we allow discrimination to be endogenous, shocks to the system from a variety of sources could tip the market toward a more or less discriminatory equilibrium.

*Basic assumptions.* Firms hire either black workers or whites, but not both. (This assumption would be justified if the social sanctions depended only on the fact of hiring black workers, not on the number of blacks hired.) At any point in time a proportion  $p$  of firms employ blacks. The timing of the model proceeds in two stages each period. First, the market demands for black workers and for white workers are determined by individual firms’ labor demand and the proportion  $p$  of firms choosing to employ black workers. Given the supply of each race, competitive equilibrium then sets the wages. Second, given  $p$  and the wages, employers decide whether employing blacks or whites maximizes utility. These choices then establish a new value of  $p$  for the next period.

*Employment and wages given  $p$ .* The objective of a firm employing whites is to maximize its utility, which is simply profits:

$$V_w = \pi_w = \theta f(e_w) - w_w e_w$$

where  $\theta$  indexes demand or output price,  $f$  is the production function,  $e_w$  is employment of whites, and  $w_w$  is the wage of whites. The utility of employers of blacks is less than profits because of the social sanction:

$$V_b = \pi_b - \alpha^i s(p) = \theta f(e_w) - w_w e_w - \alpha^i s(p)$$

where  $s(p)$  is the size of the sanction and may depend on  $p$ , and  $\alpha^i$  is the utility cost of the sanction to employer  $i$ . The cost of the sanction  $\alpha^i$  is distributed among the population of firms according to a density function  $g(\alpha^i)$ .

Each firm chooses its optimal level of employment  $e^*$  according to the usual rule,  $\mathcal{Z}'(e^*) = w$ . This holds for employers of black workers as well as whites because the sanction enters as a fixed utility cost. Suppose all  $n$  firms are identical except for the sanction cost,  $\alpha^i$ . Then the market demand for black workers is  $pne_b^*$  and the market demand for white workers is  $(1-p)ne_w^*$ . These demands along with the respective supplies by race will determine equilibrium values of  $w_b$  and  $w_w$ .

*Decision to employ black versus white workers in the next period.* This decision rests on a comparison of optimal utility based on current parameters. Define  $V^*$  and  $B^*$  as the utility and profits respectively of a firm having chosen employment optimally. Then a firm will want to employ blacks if  $V_b^* > V_w^*$ , which requires

$$\pi_b^* - \pi_w^* = \theta f(e_b^*) - w_b e_b^* - [\theta f(e_w^*) - w_w e_w^*] > \alpha^i s(p)$$

The firms that prefer to employ blacks given current conditions, then, are those for which  $\alpha^i$  is less than the critical value  $(B_b^* - B_w^*)/s(p)$ . Given the cumulative density of  $\alpha^i$ , the proportion of firms which would prefer to employ blacks is thus

$$\hat{p}(p) = G \left[ \frac{\pi_b^* - \pi_w^*}{s(p)} \right]$$

An equilibrium proportion  $p^*$  of firms employing blacks is a value of  $p^*$  such that  $\hat{p}(p^*) = p^*$ . So long as the costs of the social sanction are positive for the marginal employer, the model implies that white

wages are higher than black wages. The wage differential is essentially a compensating differential to employers of blacks, as in the Becker model.

*Dynamics and tipping.* The dynamics of black employment in this model depend on the shape of  $\hat{p}(p)$ . Consider a simplified case, in which the social sanction  $s$  is just a constant (not dependent on  $p$ ). This assumption is essentially consistent with the Becker model of taste for discrimination. In this case, note that

$$\frac{d\hat{p}(p)}{dp} = G' \left[ \frac{\pi_b^* - \pi_w^*}{s(p)} \right] \frac{1}{s} \left[ -e_b^* \frac{dw_b}{dp} + e_w^* \frac{dw_w}{dp} \right] < 0$$

where in deriving the second bracketed term I have made use of the envelope theorem ( $dB/dw = -e^*$ ). The equilibrium wage of black workers is increasing in  $p$  ( $dw/dp > 0$ ), because an increased proportion of firms employing blacks increases the market demand for black workers. The opposite holds for white workers.

This case is illustrated in Figure 9a. The equilibrium at point A is locally stable so long as the slope of  $\hat{p}(p)$  is less than 1 in magnitude. If not,  $p$  would cycle.

In order for the model to exhibit tipping, there must be a bandwagon effect, which requires that the social sanction depend on the proportion of employers observing the norm ( $1-p$ ). Thus we may assume that  $s'(p) < 0$ . In this case the slope of  $\hat{p}(p)$  is given by:

$$\frac{d\hat{p}(p)}{dp} = G' \left[ \right] \frac{1}{s^2} \left[ s \left( e_w^* \frac{dw_w}{dp} - e_b^* \frac{dw_b}{dp} \right) - s' (\pi_b^* - \pi_w^*) \right]$$

The sign of this could be positive or negative.

Tipping behavior, as identified for example in Wright's (1999) article, requires that there be at least two locally stable equilibria, as in Figure 9b. The plausibility of the S-shaped curve that might

produce such equilibria rests in part on the fact that  $G$  is itself S-shaped if the density of the costs of sanctions is roughly bell-shaped (see Schelling 1978).

If the system does exhibit such multiple stable equilibria, various factors could cause a tip from one to another— in particular, from the low- $p$  (A) to the high- $p$  (B) equilibrium. One possibility is an outside shock to the system, such as the civil rights movement or equal opportunity laws. By inducing a sufficiently large number of employers to hire blacks,  $p$  might have moved to the right of the unstable, middle equilibrium in Figure 9b, starting the ball rolling toward the high- $p$  equilibrium.

An alternative interpretation of the effect of civil rights movements and legislation, favored by Heckman and others, is that these changes reduced the effectiveness of social sanctions. A leftward shift in the distribution of the costs of sanctions would lead to an upward shift in  $\hat{p}$ . If large enough, this shift could eliminate the low- $p$  stable equilibrium, or at least leave it more vulnerable to shocks to  $p$ .<sup>17</sup>

Increased labor demand, cited by Heckman, King, and others, would operate through the equilibrium wages in my model. If the supply of qualified white workers were less elastic than the supply of black workers, increased labor demand (represented here as an increase in  $2$ ) would increase wages more rapidly for white workers, widening the racial wage gap and inducing more employers to switch to black workers. In the clerical market of, say, 1960, this mechanism has some plausibility, because there appears to have been a large “reserve” of black high-school educated women in non-clerical occupations available for recruitment.

Finally, changes in the supply of qualified workers of each race could shift  $\hat{p}$ , potentially inducing a tip. In particular, suppose improving quantity and quality of schooling for black women were leading to rapid increases in the pool of potentially qualified black workers. This increase in supply would place downward pressure on the pay of black clericals relative to whites. This in turn would

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<sup>17</sup> For discussions of the evidence on the impact of federal antidiscrimination efforts during the 1960s, see Heckman (1989), Leonard (1990), and Wright (1999).

increase the attractiveness of black workers at any value of  $p$ , shifting up the  $\hat{p}$  curve.

Readers familiar with the work of Schelling, David, or Kuran will find little new in the above model. What I have tried to stress, however, is the extent to which a tipping model of discrimination makes it possible for small or gradual changes in exogenous variables to have dramatic effects. We cannot rule out the possibility, for example, that the gradual increase in the availability of high-school educated black workers eventually induced a tip of employer behavior away from discrimination.

### **Some state-level evidence on the breakthrough into clerical jobs, 1960-1970**

In a world exhibiting bandwagon effects, the typical counterfactual exercises used by both labor economists and economic historians, which posit a stable linear relationship between labor-market outcomes and individual characteristics, are not necessarily informative. The relationship between an individual's schooling and the likelihood that she holds a clerical job, for example, may shift dramatically if the system tips. Furthermore, ecological variables, such as the percentage of the black workforce with a high-school education, can affect individual outcomes by way of determining which equilibrium obtains.

If discrimination is locally enforced, the dynamic equilibrium will vary across local labor markets, and this variation may provide useful information. In this section I use census data to examine the correlates of occupational change for high-school educated black women between 1960 and 1970 across locations, using state-level data.<sup>18</sup> Past research has proposed that increased public employment as well as general increased market demand for clerical labor contributed to black women's success in the clerical market. King (1993) notes that African-American women have in recent decades been disproportionately employed by the public sector, perhaps a reflection of civil service rules. "Labor shortage" has been cited in a number of studies as a contributing factor to black success in the labor market during the 1960s (e.g. Donohue and Heckman 1991, King 1993).

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<sup>18</sup> It would be desirable to perform this exercise for the earlier decades as well, but the small sample in 1950 makes it difficult to identify many individual state effects.

In the preceding section, I also argued that the increasing stock of qualified (high-school educated) black women could itself have tipped the market. Looking across local markets, one would thus expect that states with a more educated black female workforce, or experiencing large increases in public employment or demand for clerical labor, would also exhibit a larger increase in the percentage of black women holding clerical jobs. Furthermore, to the extent that this effect were operating through a shift in social norms, it would help explain variation in clerical work *holding education levels constant*.

I estimate the cross-state model in two stages. The first stage is a cross-section linear probability model of the probability that a woman has a clerical job (separate regressions for 1960 and 1970). To keep the model simple and control for quantity of schooling as cleanly as possible, I restrict the sample to women with exactly 12 years of education. The model controls for the effects of age and southern birth, and identifies local effects using state dummy variables.

In the second stage, the dependent variable is the change in the estimated state effects between 1960 and 1970.<sup>19</sup> To the extent that the first stage captured most of the effect of human capital by holding education fixed and controlling for birth region, the change in estimated state effects could be thought of as reflecting different local changes in racial discrimination in the market for clericals. This change is regressed on state-level measures intended to capture public-sector employment growth, the educational attainment of black women in the state, and the overall growth of demand for clerical labor.

Results of the second-stage regression are presented for several specifications in Table 5. In column (1), the regressors are a measure of public-sector employment growth for women (the change in percent of all female workers in the state employed by government) and the percentage of the black female population in the state with at least a high-school diploma. Both variables have the anticipated positive impact on the change in proportion clerical. In column (2), the change in the percentage of white female workers reporting a clerical occupation is added. This variable is a proxy for the change in overall

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<sup>19</sup> The second-stage sample consists of 33 observations. States for which there were fewer than 10 observations in either year of the first-stage regression were dropped in the second stage.

demand for clerical workers, and would thus be expected to have a positive coefficient, to the extent that changes in white employment patterns were driven more by general demand conditions than by substitution between the races. The coefficient is in fact positive.

Column (3) adds a dummy for the South. Under this specification the public employment and education variables remain statistically significant, but the growth in white clerical jobs does not. The coefficient on southern state itself suggests that there was no significant regional difference once we control for the other variables. Column (4) replicates column (3) using an alternative specification of public employment growth, namely the growth in percentage of workers employed by the government among white women only. The results are qualitatively similar.

Finally, in column (5) an alternative proxy is used for changes in demand conditions in the clerical market: namely, the proportional growth in the median annual earnings of white clerical workers in the state.<sup>20</sup> If black women were able to break into the clerical market because of a shortage of white clerical workers, one should observe greater success where white clerical's wages were growing most rapidly. This variable does not, however, have a significant effect.

The results provide some support for two of the hypotheses floated above. Growth in the percentage of black women employed as clericals was correlated with growing public employment. And high-school educated black women living in states with more educated black women like themselves were more likely to find work as a clerical.

Still, the results are very preliminary and might be questioned in a number of ways. Perhaps most importantly, the effect of the educational attainment variable (percent of black women in the state with at least 12 years of schooling), which is strongly positive in each specification, is difficult to interpret. Although the effect may be taken as support of my hypothesis that a growing pool of educated black women could tip the market, the variable is undoubtedly correlated with many other social and economic characteristics of the state. Indeed, it could be considered an index of racial attitudes: states that deprived

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<sup>20</sup> The median earnings are calculated for full-time, year-round workers only.

blacks of education were probably more likely to deprive them of other opportunities as well. Educated women may have been more successful in challenging discrimination collectively. Schooling may also have been endogenous to growth in clerical employment, if the prospect of employment opportunities induced residents of the state to pursue more education or educated women to migrate from elsewhere.

## **Conclusions**

The apparent rapidity of black women's breakthrough into clerical work and higher wages during the 1960s has led a number of economists to argue that improvements in the quantity and quality of education are unlikely to have been important causal factors. I have suggested here that even a simple decomposition of the change in percentage clerical indicates a significant role for schooling. Education was less important in the other major occupational shift for black women considered here, the decline of employment in domestic service. Analysis of cross-state variation in the growth of clerical work for high-school educated black women suggests a role for public employment and the average community level of education among black women, but further descriptive and quantitative work needs to be done.

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**Table 1**  
**Decomposition of decadal changes in percent of black female workers**  
**with clerical occupation**

Component	Using initial year as base				Using end year as base			
	1940-50	1950-60	1960-70	1970-80	1940-50	1950-60	1960-70	1970-80
<i>Model 1</i>								
Change in X	0.64	1.29	3.89	5.36	1.15	1.96	5.97	4.81
Age	-0.05	-0.21	0.18	0.80	-0.19	-0.23	1.00	0.94
Education	0.55	1.35	3.43	4.69	0.97	1.92	4.48	3.96
Residence	0.14	0.14	0.29	-0.14	0.36	0.28	0.49	-0.09
Change in b	1.69	2.20	6.85	3.07	2.21	2.87	8.93	2.53
Residual	0.51	0.68	2.08	-0.54	-0.51	-0.68	-2.08	0.54
TOTAL	2.84	4.16	12.82	7.88	2.84	4.16	12.82	7.88
<i>Model 2</i>								
Change in X	0.70	1.47	4.38	4.96	1.08	1.90	6.01	4.79
Educ. and educ.*birthplace	1.05	-0.25	4.12	5.02	-0.21	2.08	5.44	4.18
Change in b	1.77	2.26	6.81	3.08	2.15	2.69	8.45	2.91
Residual	0.38	0.42	1.64	-0.17	-0.38	-0.42	-1.64	0.17
TOTAL	2.84	4.16	12.82	7.87	2.84	4.16	12.82	7.87

Notes: Decomposition based on linear probability model of probability clerical in each year. See text for details of decomposition. Model 1 includes as regressors 10-year age categories, individual dummies for each year of education, and dummies for census division of residence. Model 2 includes as regressors 10-year age categories, education dummies for 11, 12, 13-14, and 15+ years of education, dummies for census division of residence and census division of birth, and interactions of the education dummies with the residence dummies and with the birthplace dummies. Sample restricted to black female workers (in labor force with an occupation), ages 18-64, residing in nonfarm areas. Data source: IPUMS samples, 1940-1980.

**Table 2**

**Decomposition of decadal changes in percent of black female workers  
with personal household service occupation**

Component	Initial base year				End base year			
	1940-50	1950-60	1960-70	1970-80	1940-50	1950-60	1960-70	1970-80
<i>Model 1</i>								
Change in X	-3.96	-3.00	-6.65	-5.07	-3.06	-4.23	-6.16	-2.20
Age	-0.17	0.80	-0.08	-0.76	0.72	0.50	-0.45	-0.38
Education	-3.08	-3.41	-5.80	-4.43	-2.86	-4.10	-5.15	-1.85
Residence	-0.72	-0.39	-0.77	0.12	-0.91	-0.63	-0.56	0.03
Change in b	-20.52	-1.62	-15.63	-9.55	-19.62	-2.85	-15.14	-6.67
Residual	0.90	-1.23	0.49	2.88	-0.90	1.23	-0.49	-2.88
TOTAL	-23.58	-5.85	-21.78	-11.74	-23.58	-5.85	-21.78	-11.74
<i>Model 2</i>								
Change in X	-3.40	-2.39	-6.04	-4.86	-2.75	-3.18	-4.60	-1.81
Educ. and educ.*birthplace	-0.39	-0.82	-2.45	-1.89	-0.90	-1.54	-1.62	-0.12
Change in b	-20.83	-2.66	-17.18	-9.94	-20.18	-3.46	-15.75	-6.89
Residual	0.65	-0.80	1.43	3.04	-0.65	0.80	-1.43	-3.04
TOTAL	-23.58	-5.84	-21.79	-11.75	-23.58	-5.84	-21.79	-11.75

Notes: Decomposition based on linear probability model of probability domestic in each year. See text for details of decomposition. Model 1 includes as regressors 10-year age categories, individual dummies for each year of education, and dummies for census division of residence. Model 2 includes as regressors 10-year age categories, education dummies for 11, 12, 13-14, and 15+ years of education, dummies for census division of residence and census division of birth, and interactions of the education dummies with the residence dummies and with the birthplace dummies. Sample restricted to black female workers (in labor force with an occupation), ages 18-64, residing in nonfarm areas. Data source: IPUMS samples, 1940-1980.

**Table 3a**

**Percentage of workers with clerical occupation, by cohort**  
**Nonfarm black women with exactly 12 years of school**  
*(a) Born outside the South*

Born in	Census year				
	1940	1950	1960	1970	1980
1880	16.7 (6)				
1890	12.0 (25)	10.0 (10)			
1900	12.8 (47)	10.0 (10)	28.6 (28)		
1910	12.6 (87)	4.2 (24)	28.0 (82)	30.9 (123)	
1920	18.2 (110)	22.2 (81)	32.6 (304)	33.0 (355)	35.0 (263)
1930		26.3 (80)	39.2 (444)	39.8 (643)	35.8 (553)
1940			49.2 (299)	47.5 (808)	44.1 (876)
1950				62.1 (1041)	48.4 (1822)
1960					50.2 (1754)

Notes: Cell sample size in parentheses. Age groups are 18-24, 25-34, 35-44, 45-54, 55-64. Birth year represents center of 10-year range (e.g., 1880 for 1875-85). Source: IPUMS samples.

**Table 3b**

**Percentage of workers with clerical occupation, by cohort**  
**Nonfarm black women with exactly 12 years of school**  
*(b) Born in the South, residing outside the South*

Born in	Census year				
	1940	1950	1960	1970	1980
1880	0.0 (8)				
1890	5.3 (19)	0.0 (9)			
1900	1.6 (64)	0.0 (17)	5.6 (54)		
1910	4.2 (120)	13.8 (65)	10.3 (175)	15.1 (172)	
1920	9.1 (99)	11.9 (101)	14.1 (417)	22.5 (432)	21.1 (322)
1930		13.8 (58)	18.6 (420)	28.4 (637)	28.4 (722)
1940			22.5 (346)	40.2 (909)	36.1 (1295)
1950				52.2 (603)	44.5 (1242)
1960					43.4 (507)

Notes: Cell sample size in parentheses. Age groups are 18-24, 25-34, 35-44, 45-54, 55-64. Birth year represents center of 10-year range (e.g., 1880 for 1875-85). Source: IPUMS samples.

**Table 3c**

**Percentage of workers with clerical occupation, by cohort**  
**Nonfarm black women with exactly 12 years of school**  
*(c) Born in the South, residing in the South*

Born in	Census year				
	1940	1950	1960	1970	1980
1880	6.3 (16)				
1890	4.3 (47)	0.0 (3)			
1900	3.1 (98)	10.5 (19)	7.2 (69)		
1910	5.0 (242)	10.9 (46)	8.3 (218)	9.3 (193)	
1920	4.7 (236)	10.4 (115)	13.1 (467)	16.7 (448)	12.6 (365)
1930		10.0 (80)	9.4 (628)	14.8 (856)	17.4 (889)
1940			10.3 (536)	21.4 (1357)	23.9 (1742)
1950				32.5 (1486)	31.0 (3448)
1960					33.9 (2565)

Notes: Cell sample size in parentheses. Age groups are 18-24, 25-34, 35-44, 45-54, 55-64. Birth year represents center of 10-year range (e.g., 1880 for 1875-85). Source: IPUMS samples.

**Table 4a**

**Percentage of workers with domestic service occupation, by cohort**  
**Nonfarm black women with exactly 12 years of school**  
*(a) Born outside the South*

Born in	Census year				
	1940	1950	1960	1970	1980
1880	33.3 (6)				
1890	40.0 (25)	60.0 (10)			
1900	42.6 (47)	30.0 (10)	25.0 (28)		
1910	42.5 (87)	33.3 (24)	15.9 (82)	11.4 (123)	
1920	47.3 (110)	13.6 (81)	9.2 (304)	5.9 (355)	6.1 (263)
1930		12.5 (80)	7.0 (444)	3.6 (643)	2.7 (553)
1940			5.4 (299)	1.9 (808)	1.1 (876)
1950				1.0 (1041)	0.2 (1822)
1960					0.4 (1754)

Notes: Cell sample size in parentheses. Age groups are 18-24, 25-34, 35-44, 45-54, 55-64. Birth year represents center of 10-year range (e.g., 1880 for 1875-85). Source: IPUMS samples.

**Table 4b**

**Percentage of workers with domestic service occupation, by cohort**  
**Nonfarm black women with exactly 12 years of school**  
*(b) Born in the South, residing outside the South*

Born in	Census year				
	1940	1950	1960	1970	1980
1880	50.0 (8)				
1890	52.6 (19)	11.1 (9)			
1900	53.1 (64)	17.6 (17)	38.9 (54)		
1910	55.8 (120)	35.4 (65)	25.1 (175)	17.4 (172)	
1920	55.6 (99)	24.8 (101)	17.5 (417)	10.6 (432)	6.5 (322)
1930		22.4 (58)	16.4 (420)	5.3 (637)	3.5 (722)
1940			18.2 (346)	2.6 (909)	0.7 (1295)
1950				1.3 (603)	0.5 (1242)
1960					0.8 (507)

Notes: Cell sample size in parentheses. Age groups are 18-24, 25-34, 35-44, 45-54, 55-64. Birth year represents center of 10-year range (e.g., 1880 for 1875-85). Source: IPUMS samples.

**Table 4c**

**Percentage of workers with domestic service occupation, by cohort**  
**Nonfarm black women with exactly 12 years of school**  
*(c) Born in the South, residing in the South*

Born in	Census year				
	1940	1950	1960	1970	1980
1880	25.0 (16)				
1890	46.8 (47)	33.3 (3)			
1900	51.0 (98)	31.6 (19)	44.9 (69)		
1910	50.8 (242)	34.8 (46)	36.2 (218)	25.4 (193)	
1920	63.1 (236)	25.2 (115)	31.0 (467)	20.8 (448)	15.6 (365)
1930		36.3 (80)	31.2 (628)	16.8 (856)	7.4 (889)
1940			37.1 (536)	8.9 (1357)	4.7 (1742)
1950				4.9 (1486)	1.0 (3448)
1960					0.8 (2565)

Notes: Cell sample size in parentheses. Age groups are 18-24, 25-34, 35-44, 45-54, 55-64. Birth year represents center of 10-year range (e.g., 1880 for 1875-85). Source: IPUMS samples.

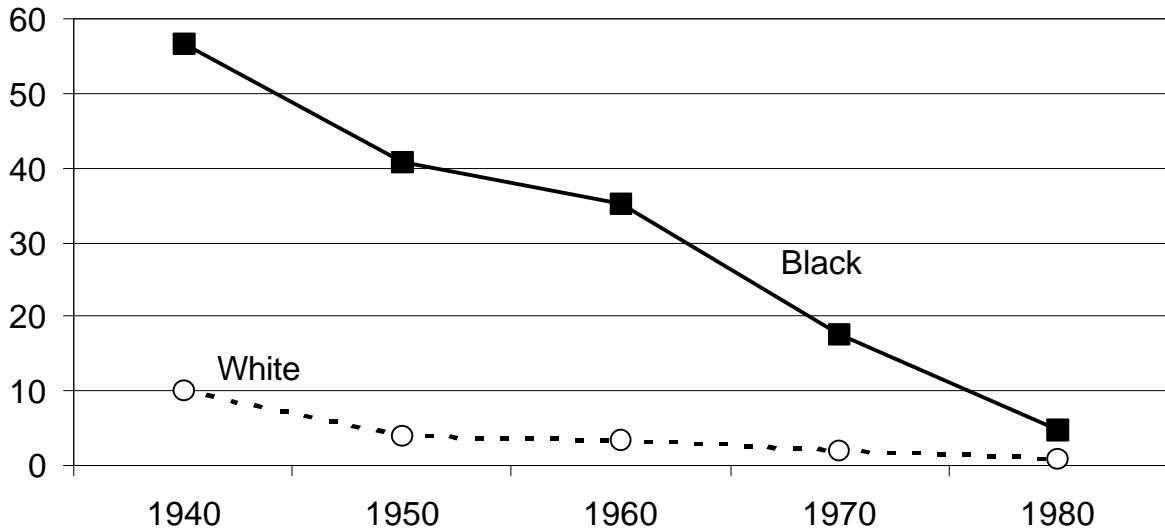
**Table 5**

**Cross-state regressions of the change in probability clerical for black women, 1960-1970**  
**Dependent variable: Change in estimated state effect from first-stage linear probability model**

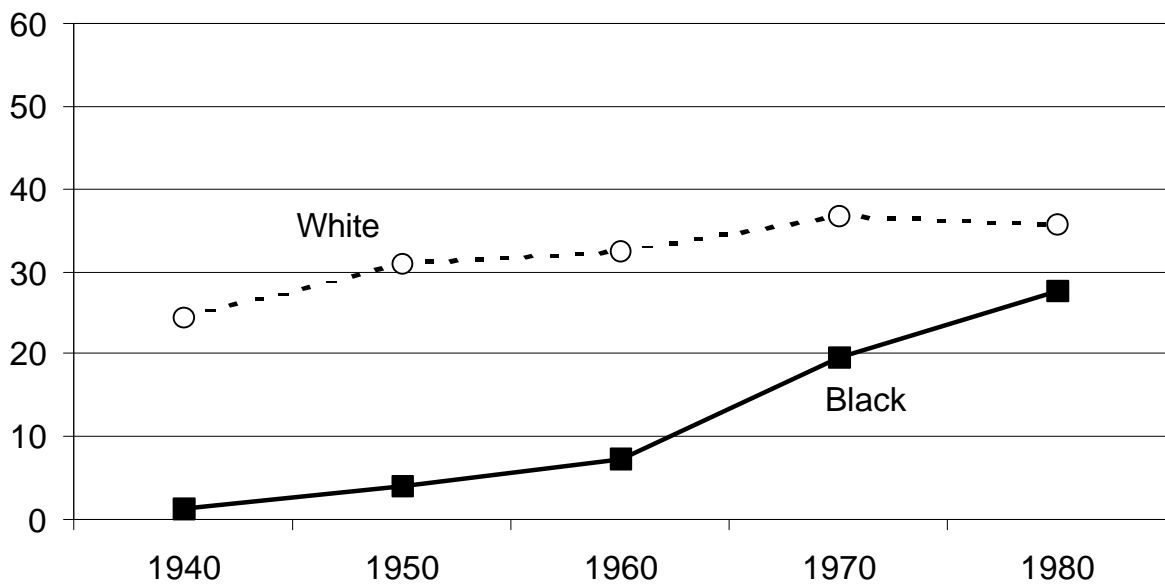
	(1)	(2)	(3)	(4)	(5)
Constant	-.094* (.027)	-.121* (.031)	-.065 (.054)	-.021 (.056)	-0.023 (.048)
Change in percent of all female workers employed by government, 1960-1970	1.072* (.413)	1.228* (.425)	1.333* (.418)		1.004* (.399)
Change in percent of white female workers employed by government, 1960-1970				.885* (.333)	
Percent of black population with at least 12 years of education, 1960	.627* (.086)	.672* (.092)	.525* (.134)	.476* (.148)	.644* (.188)
Southern state			-.033 (.024)	-.026 (.026)	-.033 (.027)
Change in percent of white female workers with clerical occupation, 1960-1970		.544* (.204)	.360 (.240)	-.043 (.327)	
Ratio of black to white median clerical earnings for year-round, full-time worker, 1960					
Percent growth in white clerical earnings, 1960-1970					-.005 (.080)
N	33	33	33	33	32
R-squared	0.528	0.571	0.594	0.558	0.578

Notes: Huber-White estimated standard errors in parentheses. \* is significant at 5% level. Source: IPUMS samples, 1960-1970 (see text).

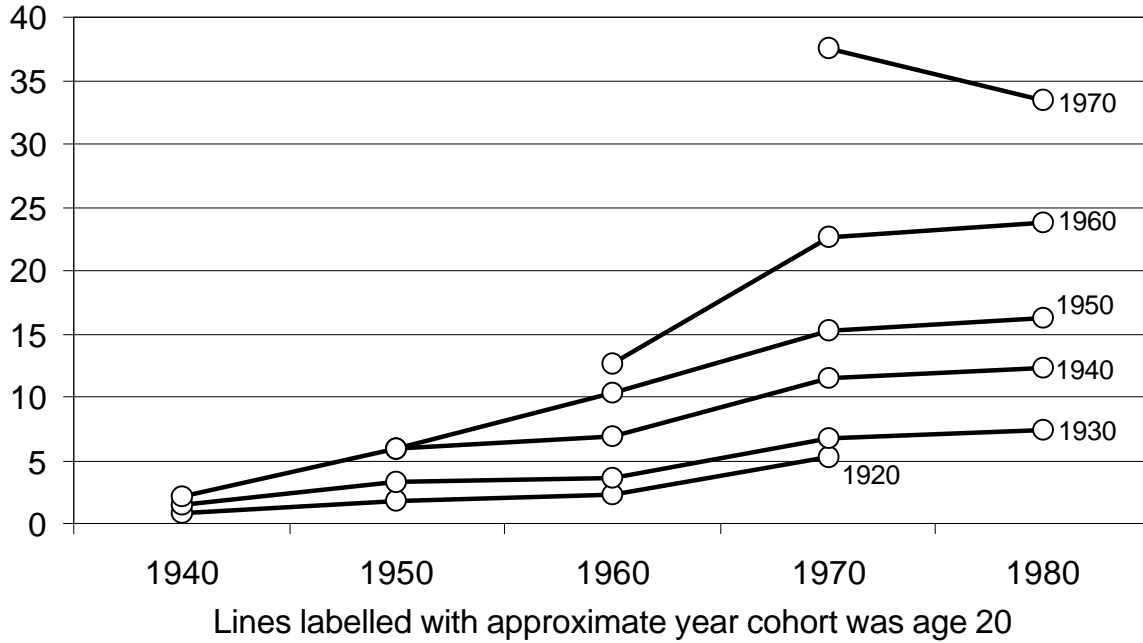
**Figure 1**  
**Percent of women in labor force with domestic service occupation, by race, 1940-1980**



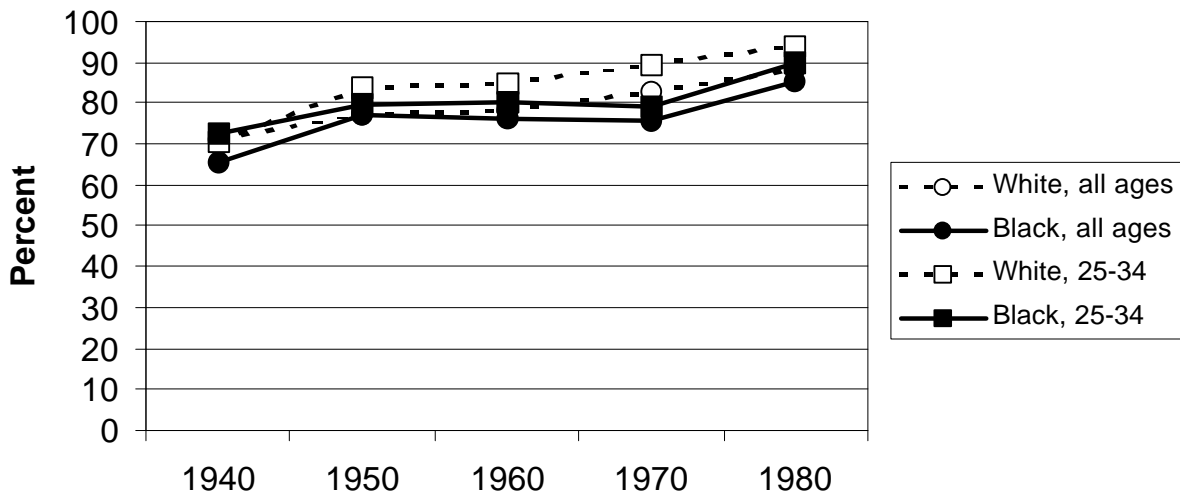
**Figure 2**  
**Percent of women in labor force with clerical occupation, by race, 1940-1980**



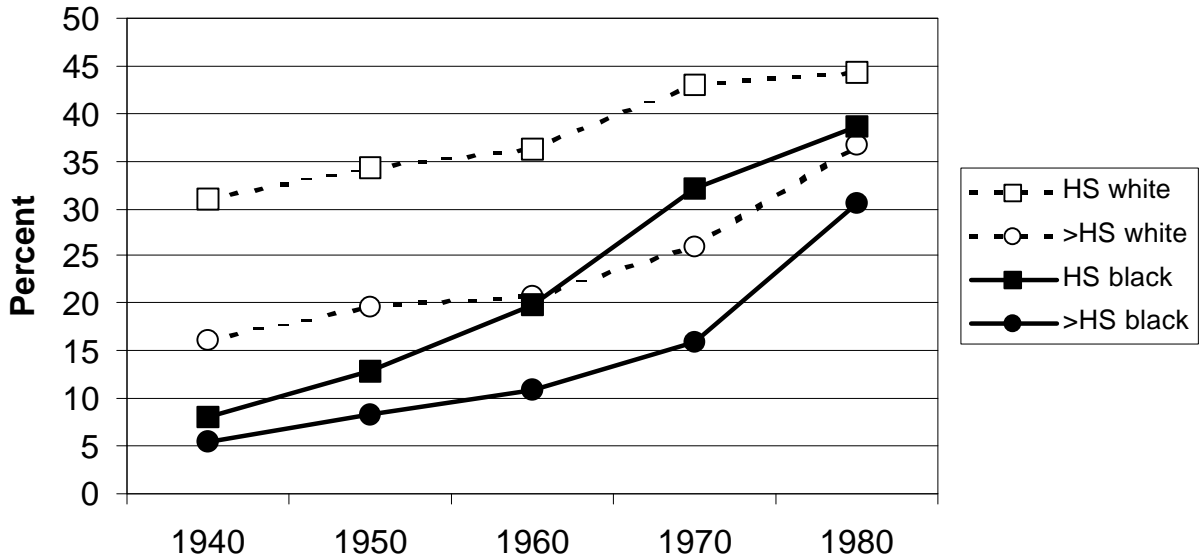
**Figure 3**  
**Percent of black women in labor force with clerical occupation, by cohort**



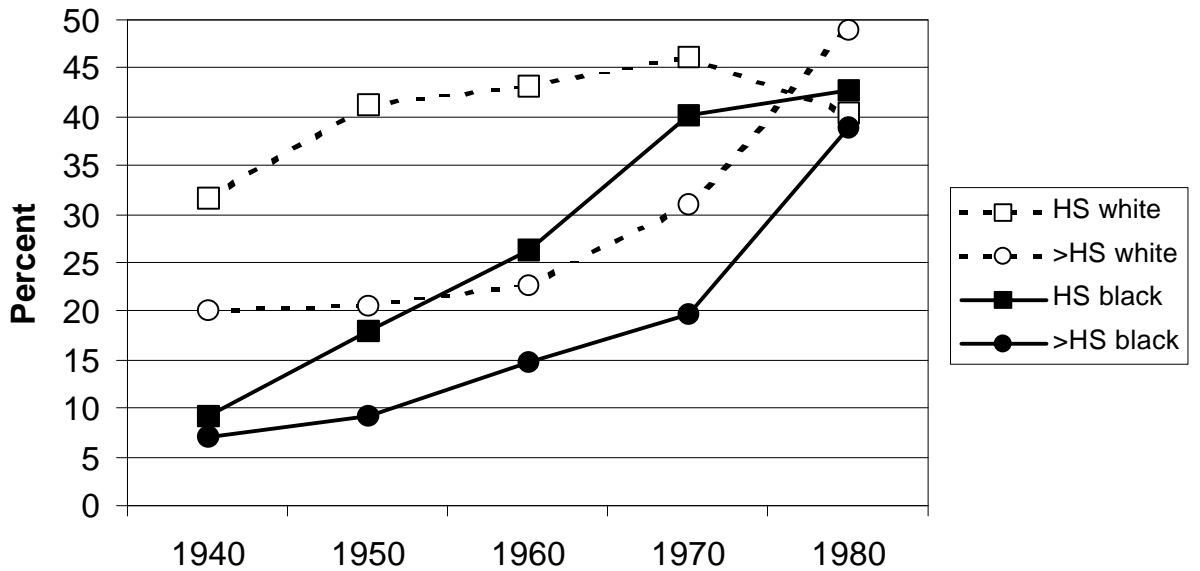
**Figure 4**  
**Percent of female clericals with 12 or more years of school, by race, 1940-1980**



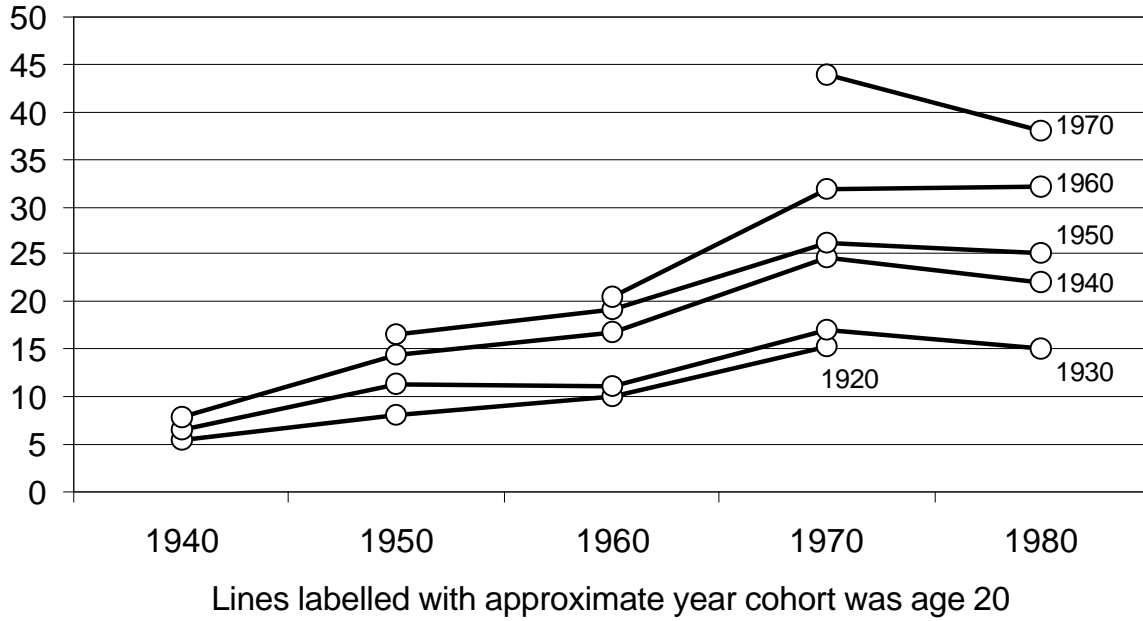
**Figure 5**  
**Education of women in LF, all ages by race, 1940-1980**



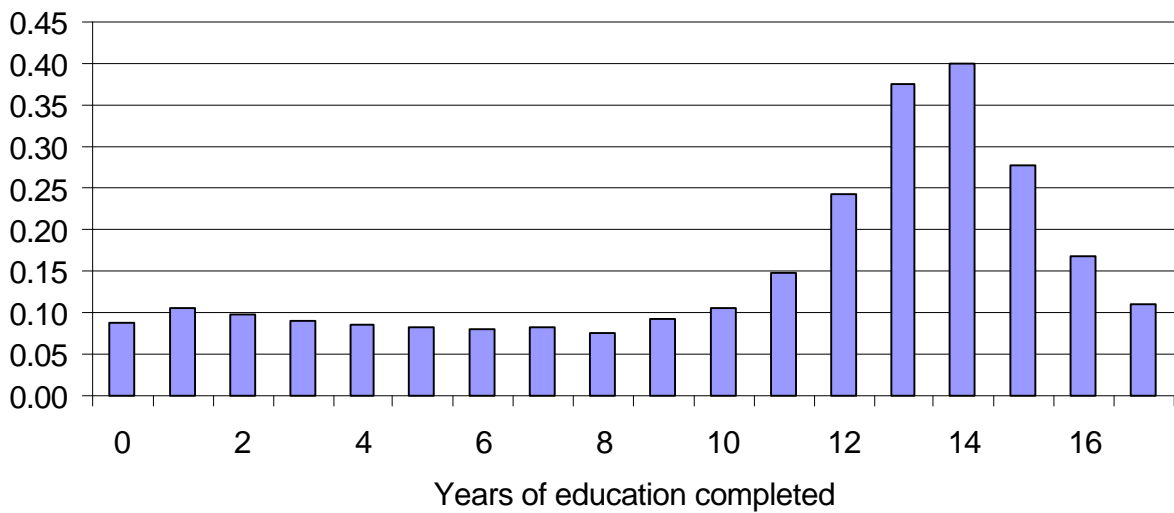
**Figure 6**  
**Education of women in LF, 25-34, by race, 1940-1980**

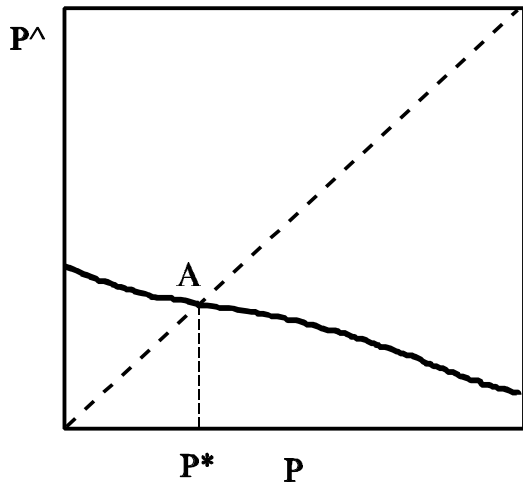


**Figure 7**  
**Percent of black women in LF with clerical occupation by cohort, exactly 12 years of school**

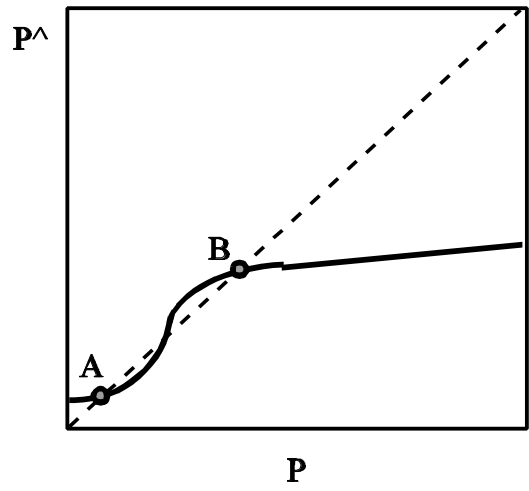


**Figure 8**  
**Estimated effect of education on probability clerical, black female workers, 1960**





**Figure 9a**  
**No Tipping**



**Figure 9b**  
**Two Stable Equilibria**