Understanding Why Black Women Are Not Working Longer

Joanna N. Lahey

Texas A&M University and NBER

Abstract: Black women in recent cohorts ages 50 to 72 years have lower employment than similar white women, despite having had higher employment when they were middle-aged and younger. Earlier cohorts of older black women also worked more than their white counterparts. Although it is not surprising that white women's employment should catch up to that of black women given trends in increasing female labor force participation, it is surprising that it should surpass that of black women. This chapter discusses factors that contribute to this differential change over time. Changes in education, marital status, home-ownership, welfare, wealth, and cognition cannot explain this trend, whereas changes in occupation, industry, health, and gross motor functioning may explain some of the trend.

Contact information: jlahey@nber.org.

Acknowledgments: Particular thanks to Claudia Goldin, Larry Katz, and members of the Sloan Women Working Longer group for valuable feedback and to the SIEPR working group. Thanks also to Molly Beck, Meghan DeAmaral, Matthew Murphy, and Abby Mulcahy for research assistance.

I. Introduction

Black women once had labor force participation and employment rates that exceeded those of white women, even at older ages. But the pattern eroded and, for most education groups, has reversed. Remarkably, older white women's participation has not just caught up with black women's. It has surpassed it. Although more women of both races are working at older ages, white women are working a lot more than are black women.

The change in relative employment by race is especially surprising given black women's greater attachment to the labor force throughout their lifecycle, with longer work histories and a greater probability of full-time work. It is also surprising given older black women's greater potential need for income compared with white women. Older black women have fewer resources than do white women in terms of wealth and other household income and have more demand on these resources in the form of dependents.

Race differences in employment among older women are understudied in contrast to the extensive literature on men or even compared with the smaller literature on younger women or all women (for an extensive literature review on race differences for male workers, see Lang and Lehmann, 2012). To provide some perspective on the group I am studying, the oldest cohorts in my sample were born in the 1910s during the Jim Crow era, while the youngest were born in the early 1960s after the landmark case Brown versus the Board of Education (1954) overturning "separate but equal." Older women today have lived through a number of society-wide changes. They have experienced narrowing racial inequality during the Great Society programs and the later effects of the erosion of many of those programs. They have seen large changes in (white) women's labor force participation (Goldin 1990, 2006), rapid advances in technology and in skill biased technical change (e.g., Goldin and Katz 2008), and great strides in education.

Figure 1 shows the difference in the probability of being employed by age for birth cohorts from 1913 to 1968 for black women compared with white women. What is remarkable is the mostly steady decline in black women's employment in contrast to white women's at older ages and across cohorts. Figure 2 shows that black female employment initially increases across cohorts at younger ages and then flattens out at all ages, particularly for older groups in recent decades. In contrast, in Figure 3 white women show stronger increases in employment at older ages across cohorts.[1] Given black women's rising educational attainment over this time period (for example, the average number of years of education for a black 60 year old woman rose from 7.5 in 1970 to 12.7 in 2010 (author's calculations from the Census/American Community Survey)), one might have expected a larger increase in employment for black women than what is shown in the cohort charts.

Although reasons for changes in black women's labor force participation are under-explored, and the age component of these changes is even more neglected, a somewhat larger literature looks at reasons for changes in the black to white female wage differential. The literature on changes in the racial wage gap in the 1970s and 1980s is sizeable (e.g., Anderson and Shapiro 1996; Blau and Beller 1992; Bound and Dresser 1999; Cunningham and Zalokar 1992; Holzer 1998, among others). More recent papers update changes in wage differentials into the 2000s (Browne and Askew 2005; Brown and Warner 2008; McHenry and McInerney 2014; Neal 2004; Pettit and Ewert 2009). In general, these papers find that black women's wages increased

[1] The lifecycle employment of women for cohorts born from the early 1930s to the late 1960s is explored by Goldin and Mitchell (2017). Goldin and Katz (this volume) show that labor force participation rates of the most recent cohorts in their forties are smaller than those of previous cohorts, but conclude that women are likely to continue to work even longer despite this decrease during mid-life.

vis-à-vis white wages from the 1960s to 1980, but the wage gap widened between 1980 and 2000.[2] Wages and employment capture different parts of the labor market experience and the relative status of black women compared with white women differs across these two outcomes.

Similar to some of the previous literature on wage differentials, I begin by making comparisons between black and white women as a whole. Cohort charts presenting employment outcomes by age show how employment outcomes have been changing by race over time.[3] I then explore potential reasons for the difference in racial employment rates over time using a regression framework that includes controls for education, marital status, children at home, home ownership, geography, and changes in welfare and SSI using the Census and the American Community Survey (ACS). None of the factors mentioned explains the racial difference and controlling for education exacerbates it.

I then focus on women with high school education to abstract from the effects of increased college going and find similar results. Finally, I use ordinary least squares regressions on the full education sample in the Health and Retirement Survey (HRS) to explore the effects of wealth, occupation, industry, activities of daily living (ADL), gross motor skills, depression, and cognition on the racial difference in employment over time and find that changes in occupation, industry, ADL, and motor skills can help explain the change in participation by race.

II. Potential Reasons for Employment Changes by Race

A. Demographics

[2] An interesting aspect of much of this earlier literature is that for some of these samples, black women's wages have been temporarily higher than white women's. Indeed, for the sample in this paper, black women's earnings are briefly higher than those of white women in their late 30s, early 40s for cohorts born in the 1940s when limiting to the high school educated, but not when combining all education levels.

[3] Employment was chosen as the outcome of interest, but patterns are nearly the same at these ages using "Not in the Labor Force" (NILF) as the outcome instead. NILF results are not presented in the interest of brevity and are available from the author.

Lack of monetary resources and the need to provide for dependents may pull black women into the labor force (Bound et al. 1996). Differences in marital status and spousal income are important examples of differences in resources between black and white women, although historically unmarried black women have had stronger labor force attachment than have unmarried white women (Goldin 1977, 1990). In the 2011 ACS, 63 percent of white women ages 50 to 72 were married but only 36 percent of similar black women were married. The probability of being married decreases for both races by age and by cohort, but the decrease across cohorts is stronger for older black women than for older white women. For more information on the effect of marriage on women's work, see Maestas (this volume). Similarly, older black women are more likely to have dependents still in their households than are older white women. For example, in the 2011 ACS, 35 percent of black women ages 50 to 72 had any child at home in contrast with 26 percent of white women.[4]

Changes in educational status over time stand out as a determining factor of the black-white female wage gap in the wage literature (Anderson and Shapiro 1996; Conrad 2005, McElroy 2005; McHenry and McInerney 2014; and Neal 2004).[5] From a theoretical standpoint, increasing education should increase labor force participation because education increases productivity and because investments in education are more likely to be made by those who can pay them off in the longer term (Goldin and Katz this volume, Lusardi and Mitchell this volume).

Geography is another demographic factor that may affect black and white employment differently over time. Several authors (e.g., see Cunningham and Zalokar 1992; Kaplan et al. 2008

[4] Fahle and McGarry (this volume) also find that non-white women are more likely to provide care for their parents or in-laws, which leads to lower labor force attachment given their increased care responsibilities.
[5] Cunningham and Zalokar (1992) is an exception; they find little effect of education on black women's increased relative wages between 1960 and 1980.

for literature reviews) note that racial convergence in wages and health differs by geography, with the South converging later than other regions. It is not a priori clear how geographical differences will affect changes in employment outcomes for women by race.

B. Monetary Resources

Lack of retirement savings may encourage longer labor force participation (Lusardi and Mitchell this volume). Using the 2010-2012 HRS, black women ages 50 to 75 have 21 percent of the total wealth of comparable white women, with $121,000 in assets compared with $558,000, and have 14 percent of the total non-housing wealth of white women, with $54,000 in assets compared with $373,000. Home ownership is a form of forced retirement savings that may differ by race. Only 59 percent of black women ages 50 to 72 in the 2011 ACS own a home compared with 82 percent of white women.

Changes in government assistance can affect the opportunity cost of work (Neal 2004). Historically, lower wages for black women make employment less attractive, especially given higher wage replacement rates from Social Security. Biggs and Springstead (2008) find that the lowest quintile of earners has a greater than 100 percent replacement rate, whereas the second quintile is within the recommended 67 to 81 percent replacement rate (Munnell, Webb and Delorme 2006). Indeed, looking at Social Security replacement rates by race, Bridges and Choudhury (2009) find higher replacement rates for blacks than for whites, and particularly for black women. Social Security generosity has been decreasing over time and across cohorts (Butrica et al. 2003/2004). In this volume, Gelber, Isen, and Song find that a reduction in Social Security benefits in the 1980s led to increases in labor force participation for older women. Moffitt (2015) notes that welfare spending has been increasing since a pause in the 1970s. The

increase in spending has been shifting from poorer families to those with higher incomes and from single-parent families to married parent families, both of which may increase white women's outside options compared to black women's. On the other hand, Moffitt (2015) finds a spending increase in favor of disability programs, which may favor older black women (who are more likely to be disabled) relative to older white women. Higher levels of government assistance mean that retirement can occur on a smaller nest egg.

C. Occupation and Industrial changes

In addition to factors that lead to an increase in the supply of older black women in the labor force, the growth in the health care field may have increased the demand for older black women given the prevalence of these women in health care fields in previous years, particularly as nursing aides. Table 1 shows the most common occupations for middle-aged women in the 1990 census and for older women in the 2009-2011 ACS. In 1990, the most prevalent occupation for black middle-aged women was that of nursing aide, while white women were most likely to be employed in clerical positions. Differential demand for these fields would suggest that black women would be more likely to be employed at older ages over time. On the other hand, the decline in manufacturing jobs has differentially hurt black women employed in those positions (Anderson and Shapiro 1996).

Related to occupational demand are occupational differences in the physical demands of jobs that can make women less able to do them as they age and potentially more prone to work-related health problems. Using O*NET data, Rho (2010) finds large differences by race in the physical demands for older women workers. In her paper, 38 percent of black women older than 58 years are in physically demanding jobs in contrast to 30 percent of white women. Interestingly,

she finds that the probability of being in a physically demanding job increases with age for black women older than 58 years. The increase is consistent with a more general decrease in physically demanding jobs over time noted in Johnson et al. (2007), although there is little information on changes in jobs with physical demands by cohort. Conversely, cognition and memory may be more important for desk jobs, which are more likely to be held by older white women.

D. Health

Poor health outcomes may lead to inability for women to work longer even if they need or desire to do so. On average black women have worse health than white women, leading to earlier retirement or disability. In the HRS, activities of daily living (ADL) provide a somewhat objective measure that signals poor health (Adams et al. 2004), and black women report more complications with ADL on a 1 to 5 scale. Using data from the 1992 HRS, Bound et al. (1996) find that black women in their forties and fifties would have greater attachment to the labor force than would white women if it were not for health conditions that limit their work ability. Similarly, higher mortality rates mean that less wealth is needed to finance retirement, all else being equal. Using the National Health Interview Survey Linked Mortality files from 1997-2004, Hummer and Chinn (2011) find that black women have 14 percent higher mortality than white women at age 65. Although the racial gap in life expectancy at birth has been narrowing slowly but steadily (Masters et al. 2014), most literature has found the adult black-white mortality gap to be more constant (for the literature see Hummer and Chinn, 2011).

III. Data and Empirics

The primary dataset used in this paper is the US Census combined with the American Community Survey (ACS). Together, these provide basic labor market and demographic statistics

from 1970 to 2011 to trace cohorts over time (Ruggles et al. 2015). The census and ACS were chosen as the main datasets because of their large sample size, the longevity of the repeated cross sections, and a wide array of variables that are consistent across years. Results that can be replicated in the CPS are similar with the exception that the effect of adding marital status on the variable of interest is smaller.

The education variables used in these different datasets are not fully consistent and often change somewhat across years in the same dataset. The variable for high school graduate used in this chapter includes those who have earned a high school diploma but have not earned a bachelor's degree (about 62 percent of the female black population ages 50 to 75 in the 2009-2011 ACS). The definition for "some college" changes across both census waves and the IPUMS ACS. Results are similar when those who are known to have earned an associate's degree are excluded (about 7 percent of the black population ages 50 to 75 in the 2009-2011 ACS) and when results are limited to high school graduates known to have less than one year of college (about 38 percent of the same population), although this information is not available for all years. To get a measure of changing government income options specific to this group, average income variables for welfare income and social security income at the state × year level were created by collapsing the relevant income variables for the universe of women ages 50 to 72.

To explore the effects of these different factors on the change in the black to white differential between the oldest and youngest cohorts, ordinary least squares regressions of the following form are used:[6]

[6] Probit analysis produces similar results.

$$(1)\ Employed_{ist} = \beta_1 Black_{ist} + Cohort_{ist}\beta_2 + Black_{ist}Cohort_{ist}\beta_3 + X_{ist}\beta_4 + \delta_{st} + \gamma_a + \sigma_s + \alpha + \varepsilon$$

$Employed_{ist}$ is a dichotomous variable indicating whether or not the woman is employed. $Black_{ist}$ is a dichotomous variable for whether a woman identifies as black. $Cohort_{ist}$ is a vector of 10-year cohort dummies ranging from women born in the 1910s to those born in the 1940s. Similarly, $Black_{ist}Cohort_{ist}$ is the interaction of these latter two variables. When running the regressions, the omitted cohort will be women born in the 1910s and the variable of interest will be the comparison of black women born in the 1940s to those born in the 1910s.[7] In some regressions, X_{ist} is a vector of individual control variables including marital status, having a child at home, or owning a home. For some regressions, average dollars of welfare for black and white women ages 50 to 72 at the state × year level are included. Finally, γ_a age fixed effects are included in all regressions to account for different age distributions within cohorts and σ_s state fixed effects are included in some regressions to test for differences by geography that do not vary across time, and state × year fixed effects δ_{st} are included to test for differences in geography that do vary across time. Results are reported for ordinary least squares regression analysis for ease of interpretation and standard errors are clustered at the state level.

A second dataset, the Health and Retirement Study (HRS) provides detailed wealth and health characteristics for women ages 50 to 72 from 1994-2012 (RAND 2016). This dataset is discussed in more detail in the HRS Appendix in this volume.

[7] For the Census and ACS results, the universe was limited so that all cohorts include the full ages 50 to 72 year age band. In this case, consistency in ages was preferred over breadth given the large sample. The magnitude of the difference between the latest cohort and the earliest cohort is larger but the patterns are the same when the 1900s cohort is used as the control and the 1950s cohort is included as the latest cohort.

Analysis for the HRS also uses equation (1), but uses a different universe because the HRS does not extend as far back as the Census. $Cohort_{ist}$ is a vector of 10-year cohort dummies ranging from women born in the 1920s to those born in the 1950s with the 1920s cohort as the control.[8] Education dummies include no high school, high school graduate or some college, and bachelor's degree or more. The non-housing wealth variable is inflated to 2014 dollars. The total wealth variable that also includes housing wealth provides nearly identical results to the non-housing wealth variable despite losing more than 5,000 observations. The HRS includes information on the longest occupation and industry the individual was employed in prior to the start of the survey. I use the 17 "longest occupation" dummies and the 19 "longest industry dummies" included in the RAND HRS. Health and cognition measures include a 0 to 5 scale for ADLs, a 0 to 5 scale for gross motor skills, an indicator for feeling depressed, self-reported memory (1 to 5), immediate word recall (0 to 10), delayed word recall (0 to 10), and an indicator that the respondent could correctly count backwards from 20 on the first try.[9] Other variables are defined as before. Results are weighted by person weight (the unweighted results are similar). Robust standard errors are presented.

IV. Why Are Black Women, Relative to White, Not Working Longer?

A. Census and ACS

Table 2 provides results for equation (1) for the universe of all black and white women aged 50 to 72 from cohorts born in the 1910s to those born in the 1940s. The variable of focus is

[8] The choice was made to provide the largest sample size possible and to make the results more comparable across ages and time with the ACS and Census results. This choice creates a problem with consistency across years because the earliest cohort and the latest cohort include different ages. An alternative choice is to use consistent ages and fewer cohorts, which limits the age range to 55 to 62 and uses cohorts born from the 1930s to the 1950s. The magnitudes for these comparisons are different but the patterns are identical when making this choice, so it is omitted for brevity and is available from the author.

[9] There are several other cognitive functioning measures in the HRS that provide nearly identical results. Counting backwards from 20 was chosen because it provided the least loss of observations.

the first row, black × 1940s cohort, and represents the change in the effect on employment of being black for women in the 1940s cohort in comparison with the 1910s cohort controlling for individual age dummies. A negative number means that the increase in employment between the earliest and latest cohorts in the sample is larger for white women than it is for black women. What is of more interest than the original magnitude of this difference is the effect of control variables on the coefficient of interest. First, note that in all of these regressions the black × cohort coefficients grow increasingly negative as the cohorts get younger, suggesting that this difference is increasing across cohorts.

Next, these telescoping regressions show the effect of adding controls to the regression on the variable of interest, the coefficient of black × 1940s cohort. When the coefficient becomes less negative (increases), that means the control helps to explain some of the difference between black and white employment outcomes in column (1). Conversely, when this coefficient becomes more negative (decreases) after a control is added, that means the control exacerbates the racial employment gap across cohorts.

The coefficient of black × 1940s cohort in column (1) provides the baseline black white difference in employment across these two cohorts, in this case -0.080, suggesting that, controlling for age fixed effects, the change in employment for older black women from the 1910s cohort to the 1940s cohort is worse than the change for older white women across the same cohorts. Adding education controls to the regression, as in column (2), decreases the size of the black × 1940s cohort coefficient by 1.3 percentage points to -0.093. Including marital status controls decreases the size of the coefficient an additional 1.1 percentage points to -0.104 in column (3), which then becomes the new baseline for the remaining columns. The presence of a child at home, added in column (4), has no additional impact. Owning a home also has very little effect on the coefficient

in column (5). Column (6) provides geographical controls at the state level and shows a slight decrease of 0.2 percentage points from column (3) to -0.1065. Controls for state × year income welfare and social security income in column (7) have little effect on the coefficient which still rounds to -0.104. Finally, including state × year fixed effects decreases the coefficient of interest in column (8) to -0.099, indicating that although state level differences may not affect the racial difference in employment over time, state level differences on the aggregate that vary over time may explain a small part of the change.

Taking these results together, factors that might help explain the increased black-white employment gap include home ownership, changes in occupational and industrial demand broadly, government transfer payments, and unexplained state × year variation. None of these controls explains much of the gap. On the other hand, education, marital status, generalized state fixed effects, and controls for specific health and clerical occupations exacerbate the racial cohort employment gap. Overall, these results support the idea that, as with changes in wage differences, black-white educational differences between cohorts are especially important.

Although these educational differences are important, there are interesting changes even within educational groups. For example, Figures 4 and 5 plot the black-white employment difference across cohorts for 37 to 72 year old non-high school graduates and college graduates respectively. Positive numbers mean that black women are more likely to be employed than white women and negative numbers mean that white women are more likely to be employed than black women. The patterns across the two groups are widely different. For the non-high school graduate group, black women work more than white women only in the oldest cohorts and predominately at younger ages. Black college graduates are still more likely to be employed than white college graduates at almost all ages. Though interesting, those without a high school

diploma represent less than 20 percent of older black women in 2009-2011 and those with a college degree or more represent only 18 percent of these women.

To subtract out the effects of changes in educational attainment over the time period, the remainder of this section focuses on the largest educational group, high school graduates. Not only is this group relatively large, but it is also likely to have been negatively affected by skill biased technical change (e.g., Goldin and Katz 2008), and increasing inequality (Autor 2014). The same group is likely to be on the margin of government program use (Irving and Loveless 2015). In this case, high school graduate is operationalized in this section as everyone with a high school degree but not a bachelor's degree. Results are similar looking at those with just a high school degree and no additional schooling, although additional schooling without further degrees is coded inconsistently across the census and ACS.

Figure 6 shows a version of the black-white employment differences shown in Figure 1 but for high school graduates only. The steady decline in black women's employment compared with white women's at older ages and across cohorts is larger for high school graduates than for all women. Figure 7 shows that, like in Figure 2, black female employment initially increases across cohorts at younger ages and then flattens out at all ages, particularly for older groups in recent decades. The cohort lines are tighter, indicating less change across cohorts than for black women of all education levels. Limiting to only those with exactly a high school diploma (figures available from author) would show even closer lines. High school educated white women in Figure 8, on the other hand, have more similar patterns to those for white women of all education levels as in Figure 3. Again, white women catch up to and then surpass black women's employment. In contrast, the employment of black women does not increase similarly.

As before with Table 2, it is possible to explore how different controls affect the black × 1940s cohort coefficient using equation (1), this time limiting the universe to high school graduates in Table 3. The difference in employment outcomes for this group in comparison with the 1910s cohort group is larger than it was for the entire sample, with a magnitude of -0.095 in column (1) compared with -0.080 for the all education sample.

Controlling for marital status again decreases the coefficient, this time by about 1.4 percentage points in column (2) to -0.109, which then becomes the base regression for the remainder of the columns. Any child at home again has little effect in column (3). Owning a home (column 4) offers only a slight increase (0.1 percentage points) to -0.108 from the coefficient of black × 1940s cohort in column (2). State fixed effects slightly increase the coefficient by less than 0.1 percentage points to -0.108 in column (5). State × year controls for welfare and social security income increase the coefficient by less than 0.1 percentage points to -0.108 in column (6). State × year fixed effects have a smaller effect on the coefficient for this group, increasing the coefficient in column (2) by 0.8 percentage points to -0.100.

Taken as a whole, the results for the high school graduate and some college group are very similar to the results for all women, which should not be surprising given that this education group makes up the majority of the black women in recent samples.

B. Health and Retirement Study

Table 4 provides results for equation (1) for the universe of all black and white women aged 50 to 72 from cohorts born in the 1920s to those born in the 1950s. The variable of focus is the first row, black × 1950s cohort, and represents the change in the effect on employment of being black for women in the 1950s cohort in comparison with the 1920s cohort controlling for

individual age dummies. For none of the regressions in Table 4 is the change between the coefficient of black × 1930s cohort significantly different from that of the omitted 1920s cohort, but that may be because of the small sample size for the 1920s cohort in this set and because of the smaller sample size of the HRS. For the most part, the coefficients of the black × cohort interaction become more negative with increasing cohorts as they did with the Census/ACS regressions.

The coefficient of black × 1950s cohort in column (1) provides the baseline black white difference in employment across these two cohorts including controls for age, marital status, and education, in this case -0.106, suggesting that the increase in employment from the 1920s cohort to the 1950s cohort is larger for older white women than for older black women.[10] Controlling for non-housing wealth in column (2) does not change the coefficient. Adding indicators for the longest occupation in column (3) decreases significance and increases magnitude to a marginal -0.076. Controls for longest industry in column (4) have a similar effect, increasing the magnitude to -0.082, though this result remains significant.[11]

Controlling for one measure of health, difficulty with ADL, in column (5) also increases the coefficient, but only to -0.098. Controlling specifically for difficulty with gross motor skills increases the coefficient to -0.074 in column (6). Controlling for depression decreases the coefficient of black × 1950s cohort in column (7) to -0.117, indicating that in the absence of changes in depression across the two groups, black employment would be higher in comparison

[10] Controlling for husband's income or for household income other than the respondent's income does not change the coefficient appreciably once marital status is controlled for.

[11] Around 13,000 observations are dropped due to "missing," "not asked this wave," and "other census code." The results in column (1) are nearly identical when limited to the universe in column (3) and are slightly attenuated with a coefficient of -0.091 for black × 1950s cohort when limited to the universe in column (4), suggesting that sample selection is not a major cause of the decreased coefficients on black × 1950s cohort.

with white employment. Similarly, including controls for memory and cognition also decreases the coefficient in column (8), indicating that absent these changes, black women's employment would also be higher.[12]

Column (9) includes all of the controls that increased the coefficient of black × 1950s cohort in the previous regressions. The coefficient drops to less than half of the original coefficient, at -0.041, and loses even marginal statistical significance. It should be noted that column (9) is only suggestive—the loss of significance and magnitude could also be caused by the drop in observations, from more than 62,000 in column (1) to fewer than 49,000, and a byproduct of having a large number of additional controls.[13]

The HRS has a wealth of variables measuring different aspects of health and cognition that have been tested in addition to the ones presented here. The inclusion of self-reported health has no added effect on the coefficient of interest.[14] Debt may be of special interest given that Lusardi and Mitchell (this volume) find that debt is one reason for women's working longer in recent cohorts. There is no effect, however, on the coefficient of interest when debt is included as a control, suggesting that its effects are not differential by race over time.

Overall, factors that might help explain at least half of the increased black-white employment gap include changes in occupation, industries, ADL, and gross motor skills. On the

[12] Nearly 7,000 observations are lost in column (8) to missing or proxy respondent. Limiting the regression in column (1) to the universe in column (8) produces a coefficient of -0.099, which is less negative than the full-sample coefficient, making the decrease to -0.12 by the addition of controls even more striking.
[13] Note that the additional controls still retain their own significance and have the predicted sign for their direct effect on employment outcomes, suggesting that the regression results are not completely attenuated.
[14] The inclusion of a variable for fine motor skills has no effect on the coefficient of interest. Other HRS variables that measure cognition have similar results to counting backwards from 20. Results are also similar in column (8) if the cognition and memory variables are included in separate regressions, though with these separate regressions the coefficient of interest is closer to -0.11. Self-reported health is not shown because, although the measure generally tracks with objective health measures such as mortality rates (Adams et al. 2004; Heiss et al. 2009), it may suffer reverse causality with employment.

other hand, controls for depression and cognition exacerbate the racial cohort employment gap.

V. Discussion and Conclusion

Why are black older women not working longer relative to white women? Older black women have worse employment outcomes, worse health, and fewer resources than comparable white women. Although increasing percentages of both black and white women across cohorts acquire bachelor's degrees or further education, black women's employment outcomes have stagnated whereas white women's have increased continually across cohorts, surpassing those of black women. The result is that each newer cohort sees a larger relative difference between the employment of blacks and whites across cohorts. The gap is even larger when the sample is limited to high school educated women, which is the largest educational subset of older black women, the most likely to be negatively affected by skill-biased technical change and increasing inequality, and the most likely to be on the margin of government program use.

The decrease in relative employment is surprising because middle-aged black women from these cohorts were more likely to work than similar white women, as were older black women from earlier cohorts. The relative picture for younger cohorts is not much better. Although the decline in outcomes such as relative employment or full-time wages seems to have stopped, it has mostly stagnated and stabilized at negative levels for black women compared with white women.

This chapter has investigated different factors that may affect black women's labor force participation differentially compared with white women's to explain changes over age and across cohorts for black women's lower employment compared with white. Differences in home ownership and government transfer payments account for at most a small part of the difference. Differences in occupation, industry, ADLs, and gross motor skills explain a larger amount of the

difference. Other factors that could be expected to explain the gap such as education, marital status, depression, and cognition, exacerbate the racial cohort employment gap.

Not all potential explanations for changes in the black-white employment gap could be tested in this framework. For example, even after controlling for levels of education, changes in education over time could still have additional impacts on employment outcomes. On the one hand, quality of schooling for black women in these cohorts has increased over time, potentially providing them with greater human capital (e.g., Carruthers and Wanamaker 2013; Conrad 2005; Margo 1990). On the other hand, removal of educational barriers allowed more high-ability black women to select into college and therefore out of the sample of high school graduates and into the sample of college graduates, which could affect the results for the high school graduate sample.

The national decline in unionization (Mishel 2012) also has ambiguous predictions for black women's labor force participation in comparison with white. Although union jobs are "better" jobs with higher wages and more benefits that render work more attractive, they also tend to have structures that encourage people to retire at earlier ages. For example, a 1999 study using the Employment Cost Index found that union workers were 22.5 percent more likely to receive pension benefits (Pierce 1999). The census does not have information on unionization and the CPS only has the variable easily available starting in 1990. Older black women in the 2014 CPS sample are about 2 percentage points more likely to be in a union than similar white women (14 percent versus 12 percent).

Discrimination is another factor that could change for black women by age and time. Although much research has documented and explored discrimination against younger black workers, we know very little about labor market discrimination against older black workers.

Numerous empirical studies demonstrate race discrimination against younger entry-level workers, but much less work has been done exploring differential treatment of older workers and applicants by race. Indeed, there is no developed theory of discrimination specific to this age group. Statistical discrimination predictions could go in either direction based on whether positive or negative stereotypes of older black women or older white women dominate. For example, black women's strong previous labor force participation could lead to positive stereotypes about human capital and future labor force participation. In contrast, black women and white women are about equally likely to be working conditional on poor health, but the higher incidence of self-reported poor health among black women may increase negative employer stereotypes about the health of black workers. A recent laboratory study (Lahey and Oxley 2016) suggests that hiring discrimination against black women compared with white women changes by the age of the worker, but much more work needs to be done in this area.

As this book should make clear, working longer is important for the economy, the solvency of government programs, and people's well-being. Black women have different histories and outcomes on average than white women. It is important to take these differences into consideration in policy analysis going forward.

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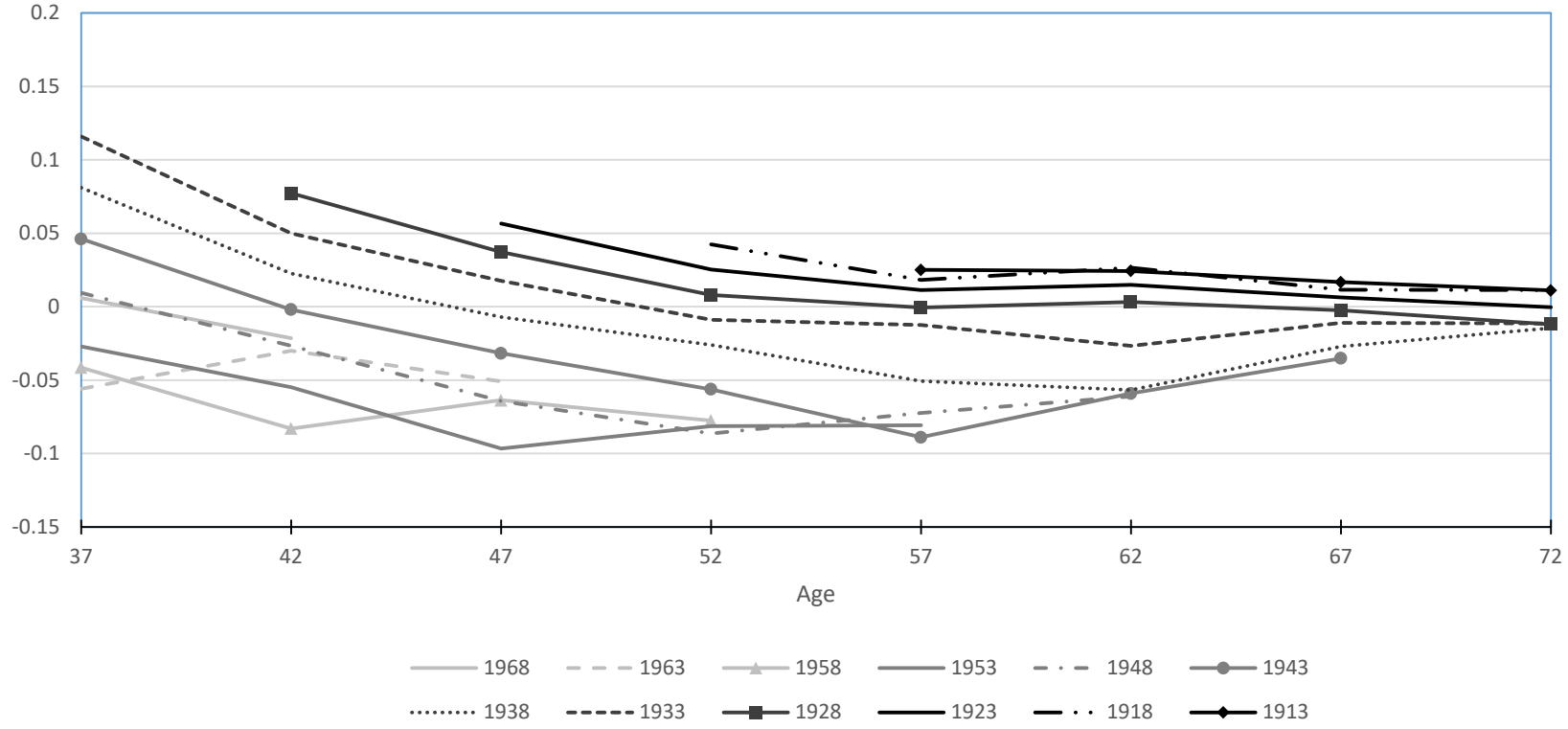
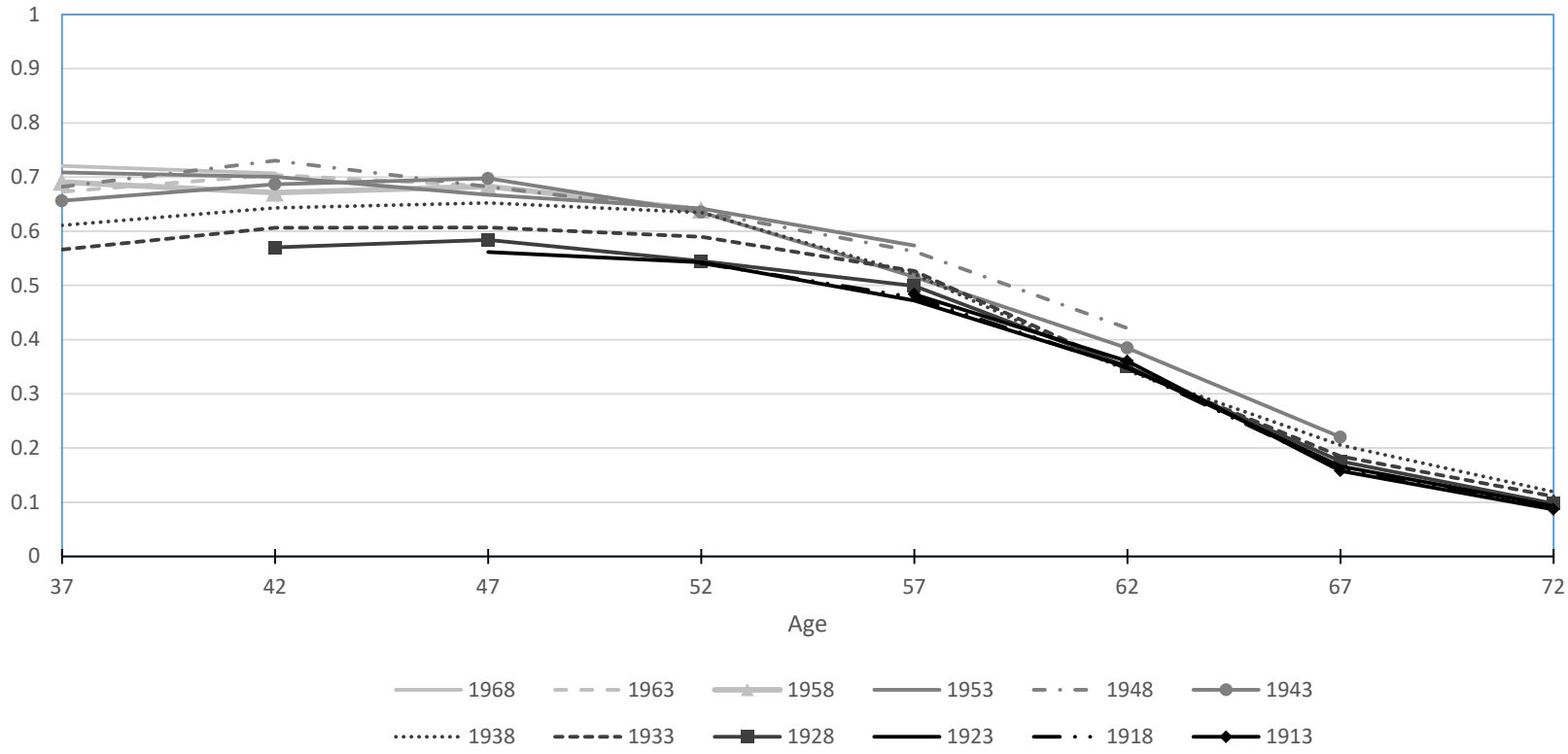
Figure 1: Difference in Employment Rates for Black Women Compared to White Women



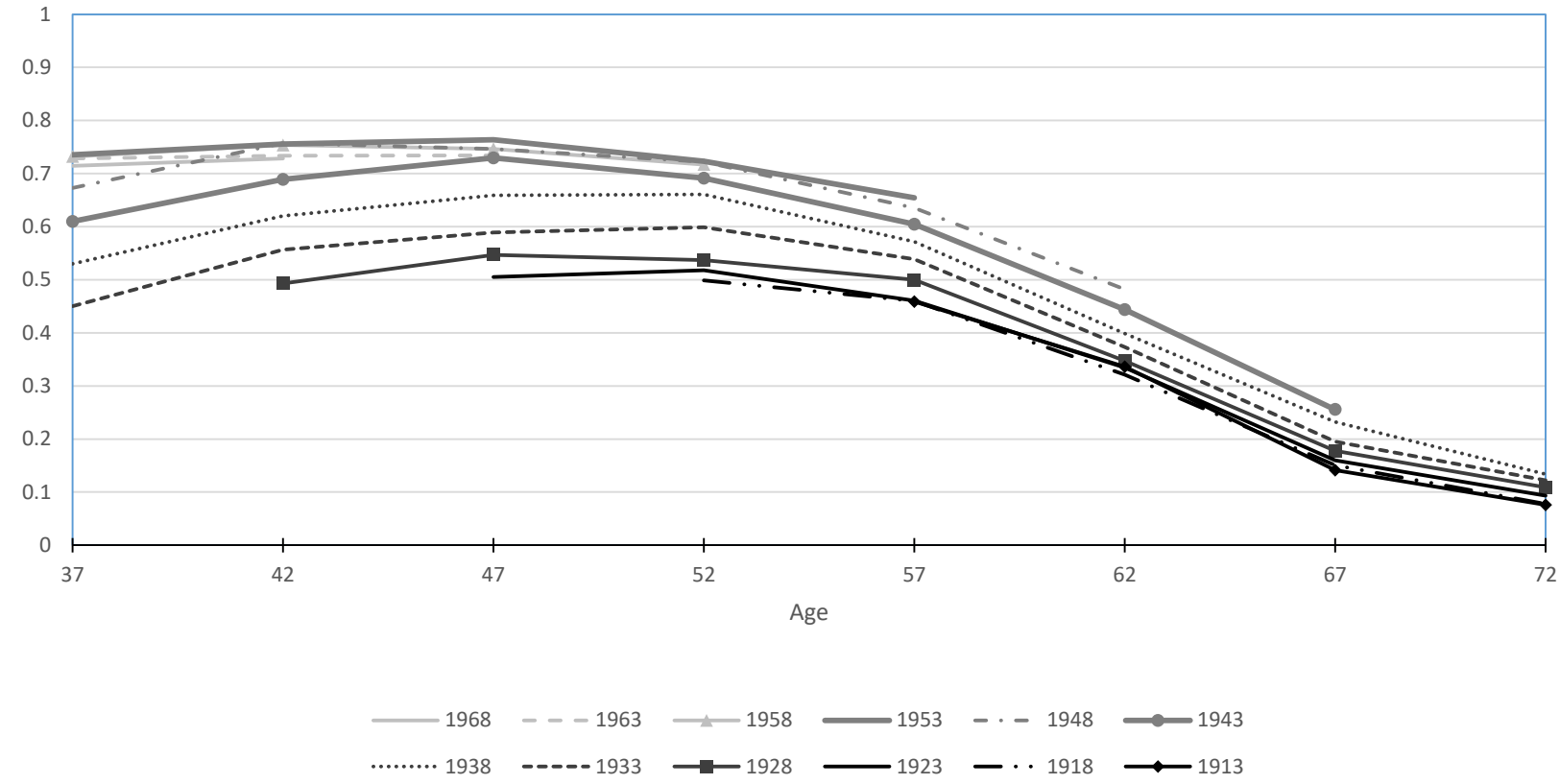
Note: Data from 1970-2000 Census and 2004-2006 and 2009-2011 ACS.

Figure 2: Employment Rates for Black Women



Note: Data from 1970-2000 Census and 2004-2006 and 2009-2011 ACS.

Figure 3: Employment Rates for White Women



Note: Data from 1970-2000 Census and 2004-2006 and 2009-2011 ACS.

Table 1: Top 10 occupations

Black		White	
Women age 50-75 in the 2009-2011 ACS			
Occupation title	# obs	Occupation title	# obs
Nursing aides, orderlies, and attendants	330,297	Secretaries	1,707,987
Secretaries	137,083	Primary school teachers	1,070,439
Primary school teachers	115,771	Registered nurses	983,689
Housekeepers, maids, butlers, stewards	114,363	Nursing aides, orderlies, and attendants	713,891
Registered nurses	100,215	Bookkeepers and accounting and auditing	623,027
Cooks, variously defined	90,160	Other managers and administrators	619,669
Child care workers	86,327	Retail sales clerks	605,713
Other teachers	78,058	Other teachers	587,770
Janitors	71,989	Supervisors and proprietors of sales	540,277
Customer service reps, investigators	66,195	Cashiers	514,186
Women age 35-49 in the 1990 Census			
Occupation title	# obs	Occupation title	# obs
Nursing aides, orderlies, and attendant	196,485	Secretaries	1,486,971
Primary school teachers	133,880	Primary school teachers	1,195,672
Secretaries	116,600	Other managers and administrators	816,029
Janitors	74,716	Registered nurses	726,020
Registered nurses	74,306	Other salespersons	708,481
Cooks, variously defined	72,572	Bookkeepers and accounting and auditing	627,867
Housekeepers, maids, butlers, stewards	71,035	Supervisors and proprietors of sales	431,216
Assemblers of electrical equipment	68,543	Cashiers	414,459
Other managers and administrators	66,666	Nursing aides, orderlies, and attendants	403,098
General office clerks	63,327	General office clerks	355,867

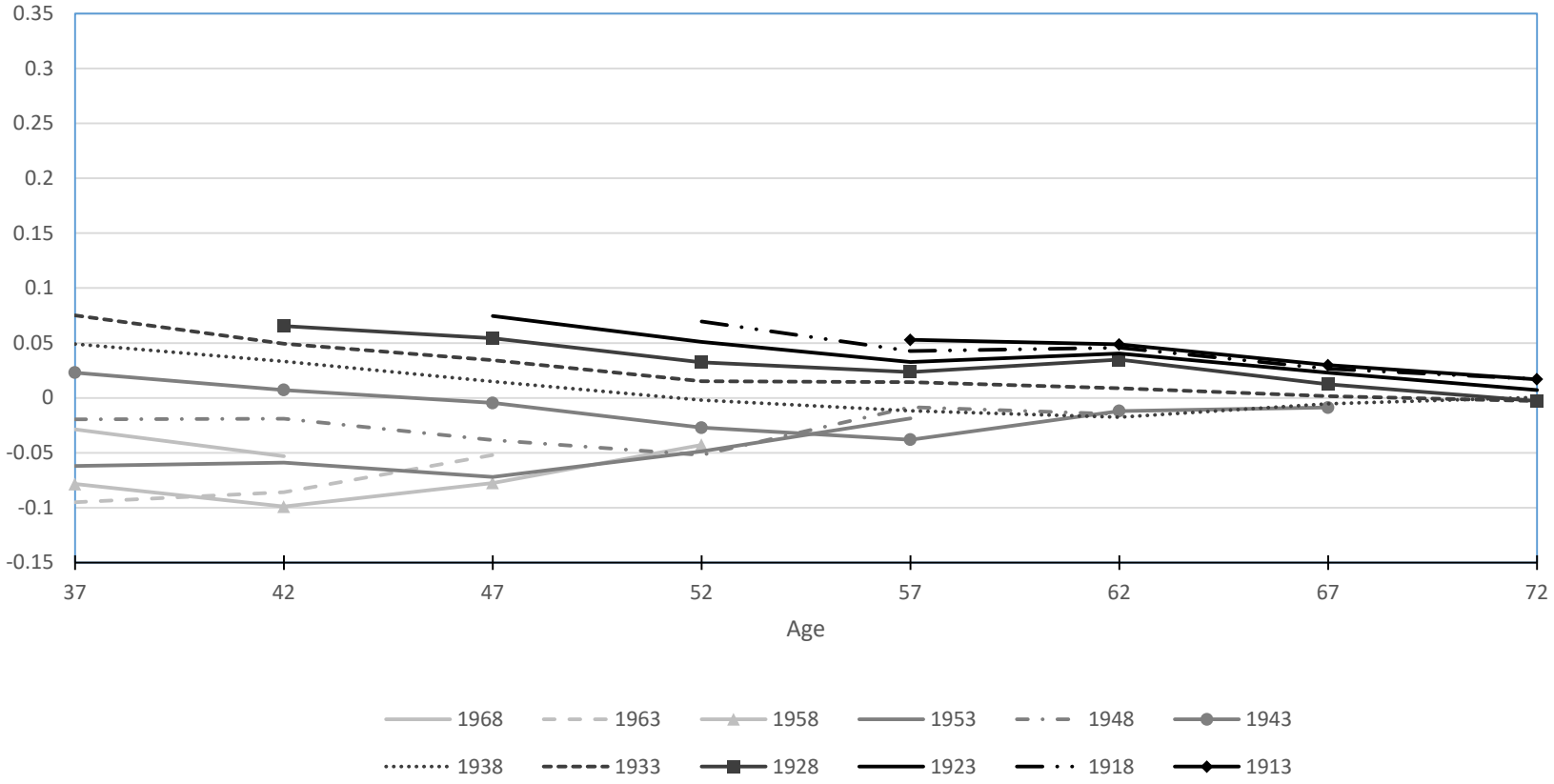
Note: Occupation is coded using three digit occ1990 coding from IPUMS. Number of women in each category is calculated using person weights. For 2009-2011, the number is averaged over the three years.

Table 2: Probability of Employment for Black Women Compared to White Women Age 50 to 72

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Black*1940s cohort	-0.0798***	-0.0929***	-0.1041***	-0.1041***	-0.1039***	-0.1065***	-0.1040***	-0.0985***
	(0.0056)	(0.0054)	(0.0057)	(0.0057)	(0.0058)	(0.0054)	(0.0061)	(0.0049)
Black*1930s cohort	-0.0411***	-0.0488***	-0.0577***	-0.0577***	-0.0580***	-0.0598***	-0.0578***	-0.0541***
	(0.0041)	(0.0042)	(0.0040)	(0.0041)	(0.0042)	(0.0036)	(0.0042)	(0.0035)
Black*1920s cohort	-0.0169***	-0.0171***	-0.0235***	-0.0235***	-0.0235***	-0.0246***	-0.0235***	-0.0224***
	(0.0033)	(0.0035)	(0.0032)	(0.0033)	(0.0033)	(0.0031)	(0.0032)	(0.0032)
Black	0.0267***	0.0634***	0.0436***	0.0436***	0.0483***	0.0478***	0.0436***	0.0432***
	(0.0071)	(0.0069)	(0.0067)	(0.0066)	(0.0065)	(0.0064)	(0.0061)	(0.0067)
1940s cohort	0.1389***	0.0797***	0.0716***	0.0716***	0.0687***	0.0729***	0.0732***	-0.0171***
	(0.0049)	(0.0058)	(0.0053)	(0.0053)	(0.0056)	(0.0049)	(0.0213)	(0.0039)
1930s cohort	0.0719***	0.0349***	0.0325***	0.0325***	0.0298***	0.0330***	0.0342**	-0.0368***
	(0.0039)	(0.0048)	(0.0043)	(0.0043)	(0.0045)	(0.0039)	(0.0147)	(0.0035)
1920s cohort	0.0123***	-0.0068*	-0.0060*	-0.0060*	-0.0079**	-0.0065**	-0.0044	-0.0446***
	(0.0034)	(0.0035)	(0.0032)	(0.0032)	(0.0033)	(0.0028)	(0.0080)	(0.0027)
Observations	5,141,247	5,141,247	5,141,247	5,141,247	5,141,247	5,141,247	5,141,247	5,141,247
Age fixed effects	X	X	X	X	X	X	X	X
Education dummies		X	X	X	X	X	X	X
Marital status dummies			X	X	X	X	X	X
Any child at home				X				
Own home					X			
State fixed effects						X		
State*year welfare, SSI income for older women							X	
State*year fixed effects								X

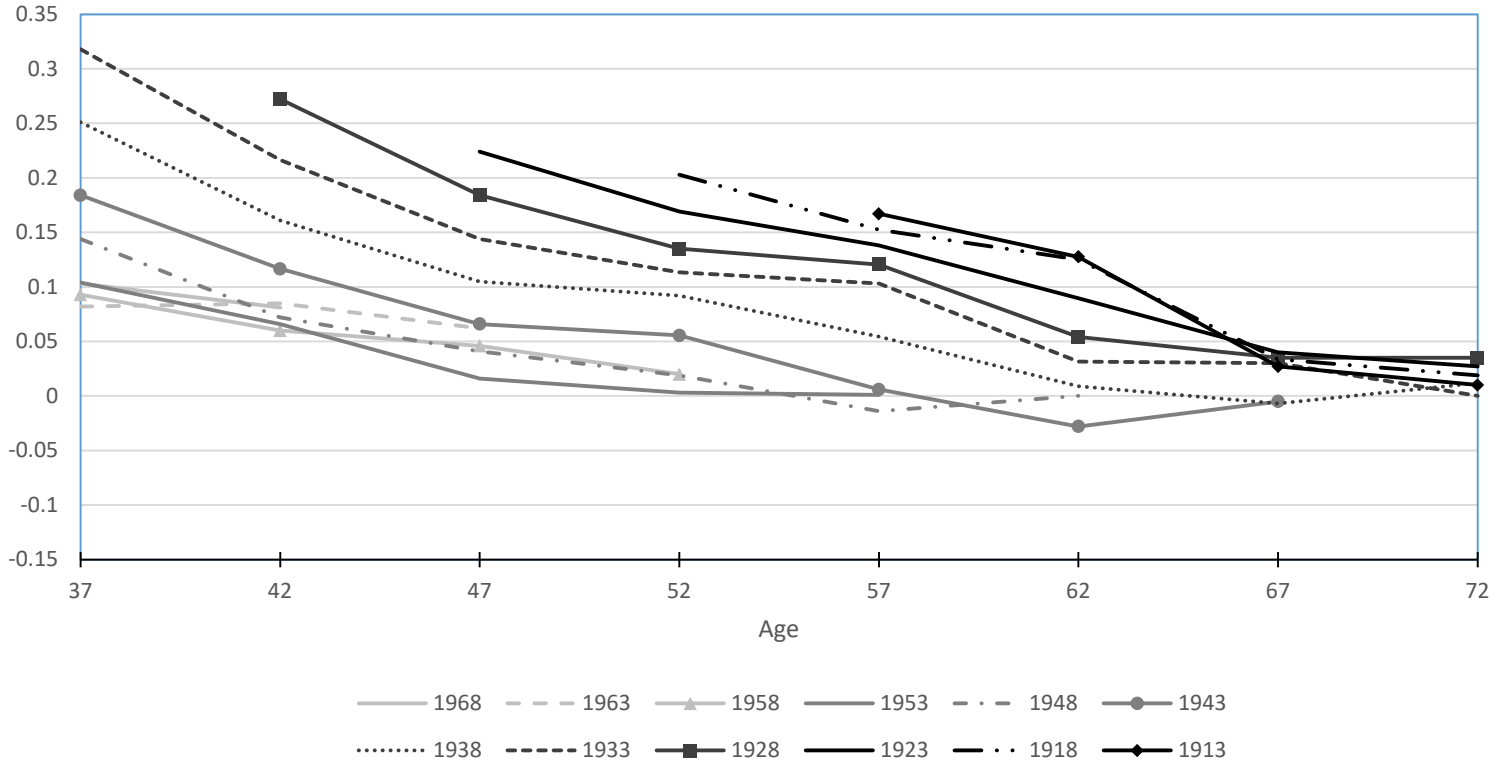
Notes: Data are from the 1970-2000 U.S. Censuses and the 2004-2006 and 2009-2011 ACS. Only black and white women age 50-72 are included in the universe. Results are from an ordinary least squares regression using equation (1). Standard errors clustered on state are in parentheses. Omitted cohort is women born 1910-1919. 1920s cohort includes women born 1920-1929, and so on. Education dummies include no high school, high school graduate and some college, bachelor's, and post-bachelor's degrees. Marital status dummies include never married, married, divorced, widowed. Any child at home is any child at home. State*year welfare and SSI income variables are the average such income streams for older black and white women in the state of residence.

Figure 4: Difference in Employment rates for Non-High School Graduate Black Women Compared to White Women



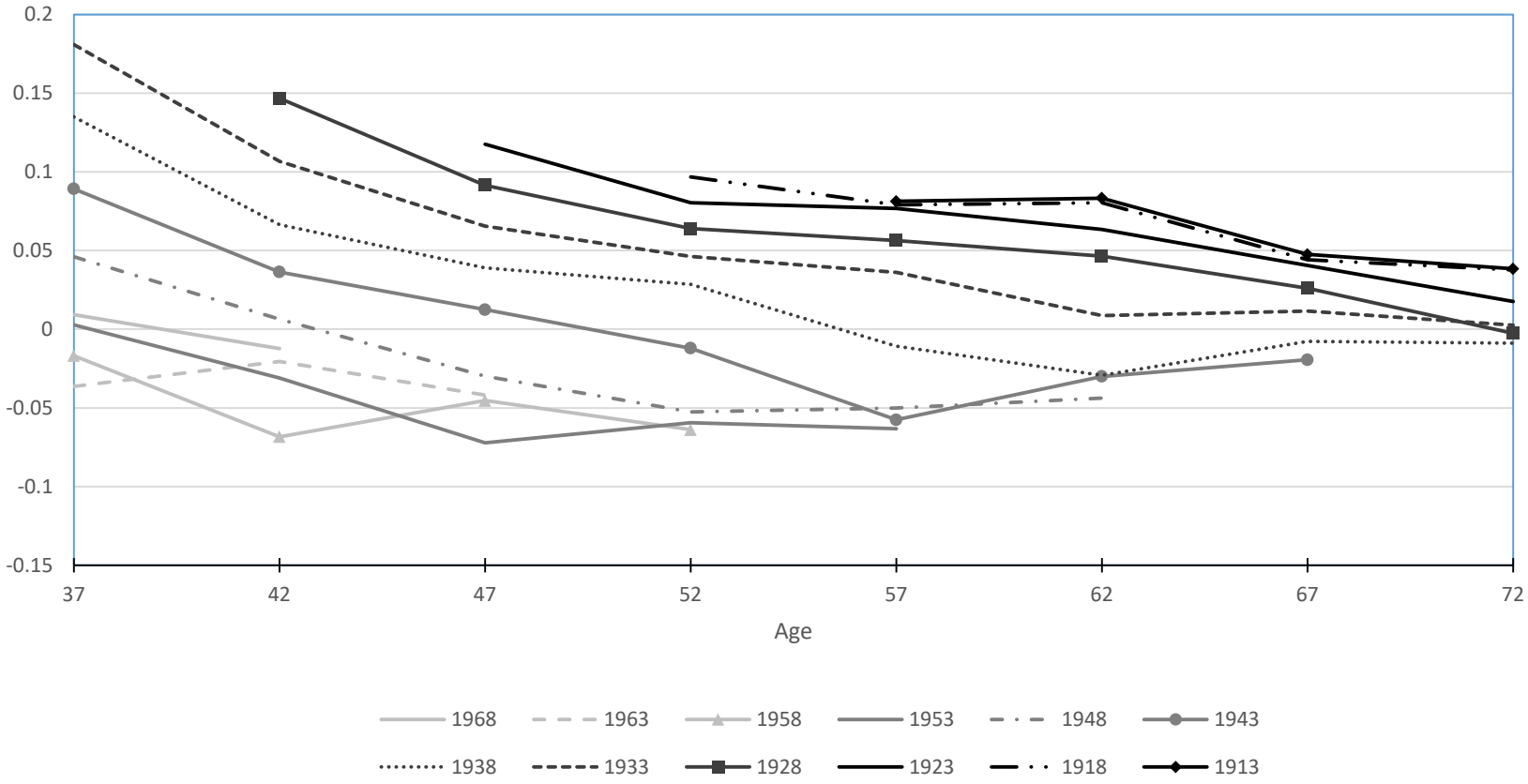
Note: Data from 1970-2000 Census and 2004-2006 and 2009-2011 ACS.

Figure 5: Difference in Employment Rates for College School Graduate Black Women Compared to White Women



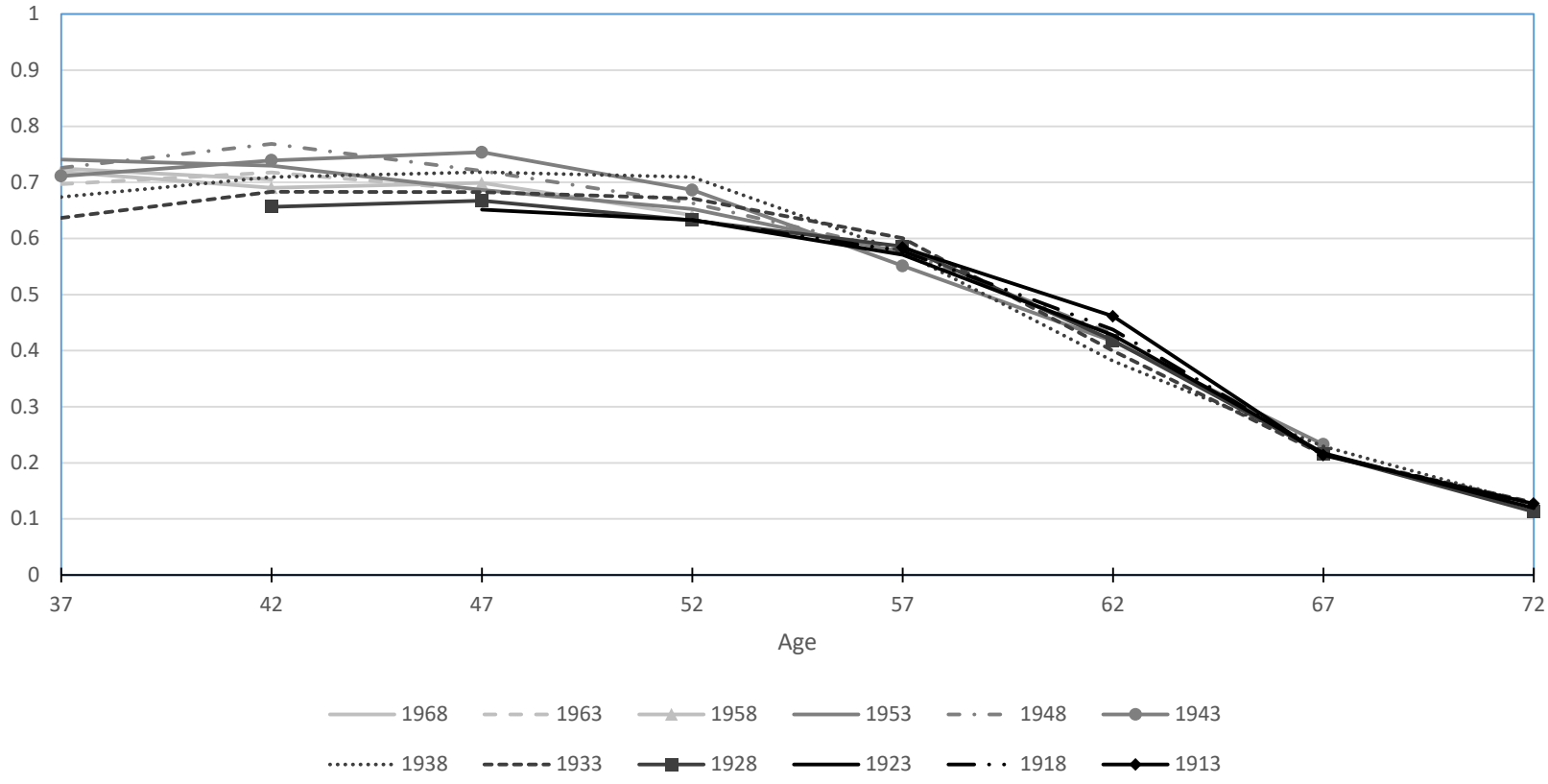
Note: Data from 1970-2000 Census and 2004-2006 and 2009-2011 ACS.

Figure 6: Difference in Employment Rates for High School Graduate Black Women Compared to White Women



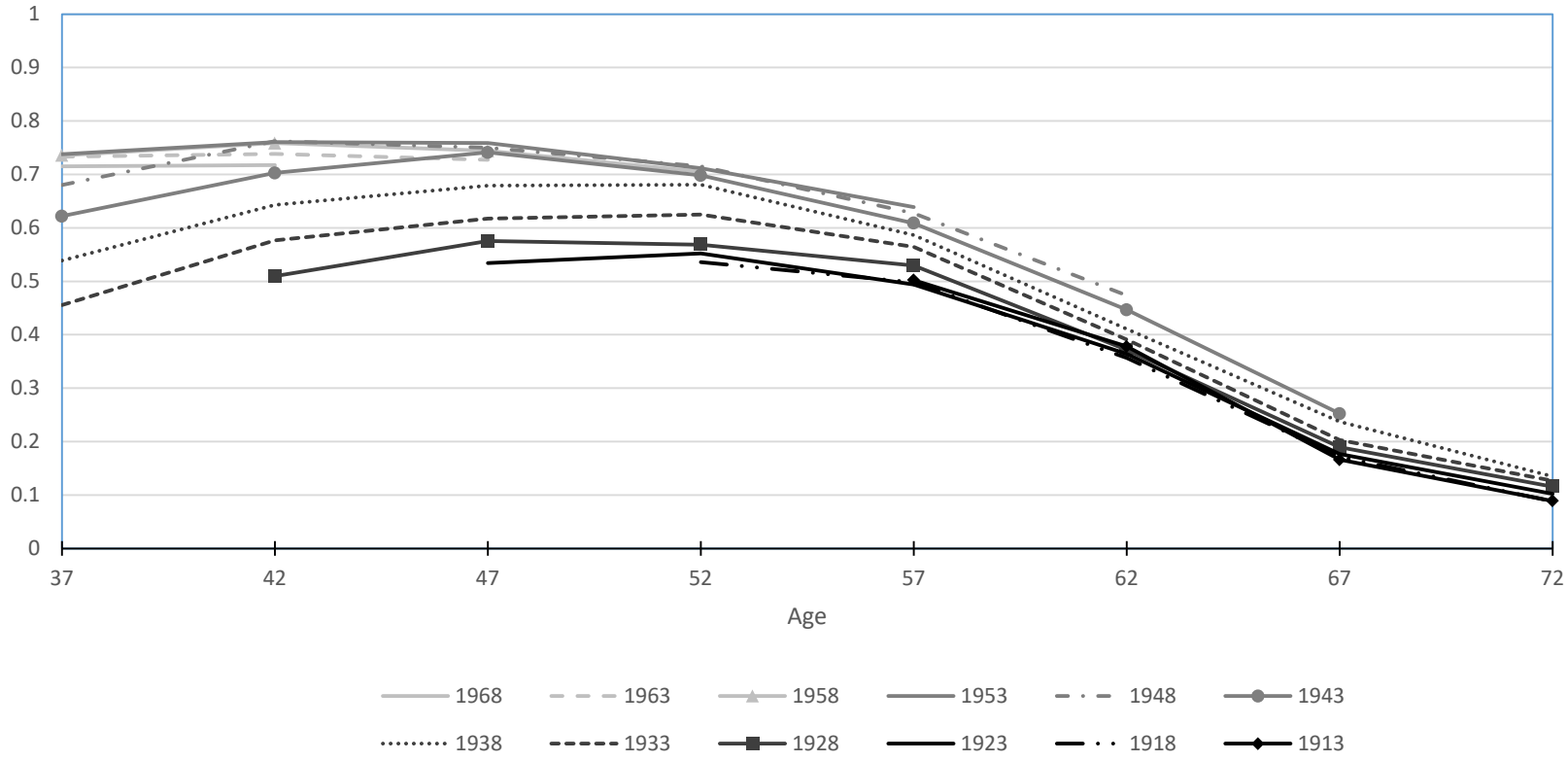
Note: Data from 1970-2000 Census and 2004-2006 and 2009-2011 ACS.

Figure 7: Employment Rates for Black Women with High School and Some College



Note: Data from 1970-2000 Census and 2004-2006 and 2009-2011 ACS.

Figure 8: Employment Rates for White Women
with High School and Some College



Note: Data from 1970-2000 Census and 2004-2006 and 2009-2011 ACS.

Table 3: Probability of Employment for High School Graduate Black Women Compared to White Women

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Black*1940s cohort	-0.0951***	-0.1086***	-0.1089***	-0.1076***	-0.1080***	-0.1081***	-0.1002***
	(0.0067)	(0.0069)	(0.0068)	(0.0069)	(0.0061)	(0.0070)	(0.0061)
Black*1930s cohort	-0.0492***	-0.0604***	-0.0608***	-0.0600***	-0.0596***	-0.0602***	-0.0540***
	(0.0058)	(0.0056)	(0.0057)	(0.0058)	(0.0047)	(0.0056)	(0.0049)
Black*1920s cohort	-0.0089*	-0.0170***	-0.0172***	-0.0165***	-0.0161***	-0.0170***	-0.0135**
	(0.0052)	(0.0051)	(0.0052)	(0.0052)	(0.0050)	(0.0052)	(0.0052)
Black	0.0646***	0.0403***	0.0399***	0.0436***	0.0414***	0.0398***	0.0364***
	(0.0076)	(0.0071)	(0.0069)	(0.0072)	(0.0064)	(0.0064)	(0.0062)
1940s cohort	0.1078***	0.0999***	0.1001***	0.0968***	0.1008***	0.1065***	-0.003
	(0.0053)	(0.0048)	(0.0049)	(0.0051)	(0.0045)	(0.0229)	(0.0043)
1930s cohort	0.0588***	0.0575***	0.0574***	0.0545***	0.0573***	0.0622***	-0.0215***
	(0.0044)	(0.0039)	(0.0039)	(0.0041)	(0.0033)	(0.0157)	(0.0036)
1920s cohort	0.0059*	0.0080**	0.0078**	0.0059*	0.0071***	0.0106	-0.0359***
	(0.0034)	(0.0030)	(0.0029)	(0.0032)	(0.0026)	(0.0084)	(0.0028)
Observations	2,904,866	2,904,866	2,904,866	2,904,866	2,904,866	2,904,866	2,904,866
Age fixed effects	X	X	X	X	X	X	
Marital status dummies		X	X	X	X	X	
Any child at home			X				
Own home				X			
State fixed effects					X		
state*year welfare, SSI income for older women						X	
state*year fixed effects							X

Notes: Universe is limited to black and white women with high school degrees or some college, including associates degrees. Otherwise notes are the same as in Table 1.

Table 4: Probability of Employment for Black Women Age 50-72 Compared to White Women

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Black*1950s cohort	-0.1057***	-0.1058***	-0.0762*	-0.0821**	-0.0978***	-0.0741**	-0.1170***	-0.1205***	-0.0406
	(0.0248)	(0.0248)	(0.0402)	(0.0398)	(0.0248)	(0.0298)	(0.0258)	(0.0311)	(0.0429)
Black*1940s cohort	-0.1007***	-0.1014***	-0.0674*	-0.0623*	-0.0857***	-0.0628**	-0.1095***	-0.1109***	-0.019
	(0.0233)	(0.0233)	(0.0374)	(0.0370)	(0.0236)	(0.0289)	(0.0244)	(0.0300)	(0.0407)
Black*1930s cohort	-0.026	-0.0275	-0.0339	-0.0373	-0.0195	-0.0013	-0.0344	-0.0326	0.0029
	(0.0228)	(0.0228)	(0.0370)	(0.0367)	(0.0231)	(0.0286)	(0.0240)	(0.0298)	(0.0405)
Black	0.0421**	0.0402*	0.0277	0.0202	0.0545**	0.0358	0.0591***	0.0819***	0.0085
	(0.0213)	(0.0213)	(0.0360)	(0.0356)	(0.0217)	(0.0275)	(0.0225)	(0.0285)	(0.0396)
1950s cohort	0.0588***	0.0584***	0.0351**	0.0367**	0.0717***	0.0723***	0.0542***	0.0757***	0.028
	(0.0124)	(0.0124)	(0.0162)	(0.0162)	(0.0123)	(0.0134)	(0.0125)	(0.0141)	(0.0173)
1940s cohort	0.0504***	0.0509***	0.0335**	0.0347**	0.0557***	0.0554***	0.0478***	0.0618***	0.019
	(0.0104)	(0.0104)	(0.0142)	(0.0142)	(0.0104)	(0.0118)	(0.0106)	(0.0121)	(0.0156)
1930s cohort	0.0222**	0.0234**	0.0306**	0.0328**	0.0210**	0.0173	0.0211**	0.0284**	0.0088
	(0.0095)	(0.0095)	(0.0135)	(0.0135)	(0.0096)	(0.0111)	(0.0098)	(0.0112)	(0.0150)
Observations	62,164	62,164	49,281	49,075	62,072	61,107	60,716	55,328	48,711
Age fixed effects	X	X	X	X	X	X	X	X	X
Marital status dummies	X	X	X	X	X	X	X	X	X
Education dummies	X	X	X	X	X	X	X	X	X
Non-housing wealth		X							
Longest occupation dummies			X						X
Longest industry dummies				X					X
Activities of daily living (0-5)					X				X
Gross motor scale (0-5)						X			X
Felt depressed							X		
Memory and counting backwards								X	

Notes: Data are from the 1994-2012 HRS. Only black and white women age 50-72 are included in the universe. Results are from an ordinary least squares regression using equation (1). Robust standard errors are in parentheses. Omitted cohort is women born 1922-1929 (1920-1921 are outside the age range). 1930s cohort includes women born 1930-1939, and so on. Education dummies include no high school, high school graduate and some college, and bachelor's including post-bachelor's degrees. Marital status dummies include never married, partnered, married, divorced, and widowed. Memory controls include self-reported memory, immediate word recall (1-10), and delayed word recall. Counting backwards indicates that the participant was able to correctly count backwards from 20 on the first try.