Why aren't black women working longer?

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Abstract: Black high school graduate women in current cohorts age 50-75 have lower employment than similar white women, despite having had higher employment when they were middle-aged and younger. Additionally, the gap between black and white women in white women's favor has increased with each successive cohort of older women. While 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 pull women into and out of employment and how they change over time for older black high school graduate women compared to similar white women.

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While current cohorts of older black women high school graduates had more steady labor force attachment and employment compared to similar white women when they were young and middle-aged, they have lost their employment advantage as they age. Moreover, older black women's employment disadvantage has increased with each successive cohort. Much of this decrease in comparative outcomes is driven by the actions of cohorts of white women as they increase their labor force participation. However, older white women's participation has not just caught up with black women's; it has surpassed it.

This change in relative employment is especially surprising given black women's greater potential need for income compared to similar white women at older ages. Older black women have fewer resources than white women in terms of wealth and other household income, but also have more demand on these resources in the form of dependents at home who may need monetary support. This change is also surprising given their greater history of greater attachment to the labor force throughout their lifecycle, with longer work histories and a greater probability of full-time work.

This chapter explores factors that may differentially pull or push high school educated black women into or out of employment at older ages. Lack of resources and a larger number of dependents may pull black women into the labor force from the supply side. Additionally, the increased need for the low level health positions that black women in these cohorts have historically worked in pulls them into employment from the demand side.

In the other direction, there are several factors pushing older black women out of the labor force. For example, from the supply side, on average black women have worse health and more physically demanding jobs, leading to earlier retirement or disability. Additionally, their

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Also note: Older white women's participation hasn't just caught up with black women's, it has surpassed black women's.

We've always had a mortality gap, a wealth gap, and the marital gap has been increasing (check—white women no longer as likely to be married, right?). (What has happened to number of dependents?) Yet black women used to work more than white women.

That means there's room for other explanations

lower wages make employment less attractive especially given higher wage replacement rates from Social Security. Higher mortality and higher levels of government assistance mean that retirement can occur on a smaller nest egg. From the demand side, although nursing jobs are still in high demand, the decline in manufacturing jobs has differentially hurt black women employed in those positions when they were young or middle-aged, as did the decline in household service positions when they were middle-aged.

While many of these push factors might initially seem to explain the employment differences between black and white women, it is important to note that most of these factors have always existed. Indeed, for most of them the gap between black and white women has been increasing or decreasing in a way that would predict increased labor market participation for black women compared to white (e.g. the decreasing mortality gap, the increasing marital gap, and so on). That white women's employment outcomes for these cohorts could surpass those of black women's leaves the door open for additional potential explanations.

Two additional potential explanations, changes in educational outcomes for these cohorts, and labor market discrimination, could either push or pull black women into employment compared to white women. On the one hand, quality of schooling for black women in these cohorts has increased over time, potentially providing them with greater human capital. 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. Discrimination is another factor that could change for black women by age and time. Although a large amount of work has documented and explored discrimination against younger black workers, we know very little theoretically or empirically about labor market discrimination against older black workers. A recent laboratory study (Lahey and Oxley 2016) suggests that hiring discrimination against black

women compared to white women changes by the age of the worker, but much more work needs to be done in this area.

Unlike many earlier papers that make comparisons between black and white women as a whole (e.g., Blau and Beller 1992, Bound and Dresser 1999, Bound et. al 1996, Brown and Warner 2008, Conrad 2005, Pettit and Ewert 2009), this paper will focus on women with high school education in order to subtract out the effects of increased college-going among both groups of women. These education effects are more thoroughly explored in McElroy (2005), McHenry and McInerney (2014), and Neal (2004) as well as in earlier literature. The group of high school educated women is an important one, as it is the largest educational subset of the female black population age 50-75 today, from 30-38% depending on the dataset used (including some college but no additional degree increases the range from 53-57%). Not only is this group a large group, but it is one likely to be negatively affected by skill biased technical change (e.g., Goldin and Katz 2007), and increasing inequality (Autor 2014). The same group is likely to be on the margin of government program use (Irving and Loveless 2015). Despite the importance of this group, surprisingly little literature addresses race differences for older workers in this category.

Race differences in employment among older women is understudied compared to the extensive literature on men (see Lang and Lehmann (2012) for an extensive literature review) or even compared to the smaller literature on younger women or women as a whole. To provide some perspective on this group, the oldest cohorts in this sample were born in the 1930s, during the depression and well into the Jim Crow era, while the youngest were born in the early 1960s after Brown vs the Board of Education. Older women today have experienced a number of society-wide changes during their lifetimes. They have experienced narrowing inequality during

the Great Society programs, as well as increasing inequality more recently. They have seen large changes in (white) women's labor force participation over time (Goldin 1990, 2006) and rapid changes in technology and skills biased technical change (e.g., Goldin and Katz 2007).

The following sections will discuss the pull and push factors that differentially affect the employment of high school educated black women compared to similarly educated white women.

Datasets Used and Discussion of Education Variable

This chapter uses four datasets. The Current Population Survey Annual Social and Economic Supplement (CPS - ASEC) provides both basic and more detailed labor market and demographic statistics from 2014 (Flood et al. 2015). The US Census combined with the American Community Survey provide basic labor market and demographic statistics from 1970 to 2011 to trace cohorts over time (Ruggles et al. 2015), using the cohort chart template available in the online appendix from (Goldin 2006). The monthly CPS has also been matched to get a rough measurement of job flows, again using the 2014 CPS using a modified version of Madrian and Lefgren (1999). Finally, the Health and Retirement Study (HRS) provides detailed wealth and health characteristics for women age 50-75 from 1994-2012 (RAND 2016).

Unfortunately, the education variables used in these different datasets are not completely consistent with each other. My preferred education variable is "grade attained," including those who have earned a high school diploma or GED. Differences in where to include those who have completed 12th grade without a diploma, some college less than 1 year, and those with exactly 13 years of education mean that the percentage of women in our sample ranges from 30% (2012 HRS) to 38% (2009-2011 ACS) of the population of black women age 50-75 in

recent years. Researchers using the IPUMS ACS across time should be particularly aware of how the definitions for "some college" change across census waves.

The patterns shown in this chapter are nearly identical when people with "some college but no additional degrees" after high school are included in the sample (generally increasing the sample size by ~ 2/3). The only outcomes that shift appreciably in terms of levels are those for unemployment—both black and white women with some college are more likely to be unemployed than those who list only having a high school degree.

Differential Employment and other Labor Market Outcomes

Using the datasets described in the previous section, this chapter will explore potential reasons for black high school graduate's lower employed and labor force participation. This section describes general differences in labor market outcomes between black and white women in our sample, as outlined by the summary statistics in Table 1.

Although older black women today are less likely to be employed than older white women, that has not been true historically. On average, black high school graduate women between the ages of 50-75 in the 2014 ASEC are around 1 ppt less likely to be employed than similar white women. Figure 1 uses the same dataset to show that this gap increases then decreases with age as more women drop out of the labor force. Breaking this outcome into separate cohorts using the Census, as in Figure 2, it is clear that this trend of older black women being less likely to be employed is a relatively modern one. Earlier cohorts of black women spent their middle ages more likely to be employed than white women, but this difference has been disappearing at earlier ages with each successive cohort. The cohort born in 1938 was the first to see lower employment rates for black women than for white women at any age. These changes are driven almost entirely by changes in white women's employment over these periods,

demonstrated in Figure 3; black women's employment has not changed as much for these cohorts, as shown in Figure 4.

The pattern for labor force participation is very similar to that of employment. Again using the 2014 ASEC, black women in this group are 1 ppt more likely than white to be not in the labor force (NILF). Extended cohort results for NILF using the Census show very similar patterns across age and time as results for employment outcomes and are available by request.

Other labor force outcomes also display patterns of older high school educated black women having more difficulty in the labor market than similar white women. Black women in this group are 4 ppt more likely to be unemployed. In the 2013 matched monthly CPS, they also see more labor market churning, with a 0.3 ppt greater probability of leaving a job conditional on previous month's employment and a 1.1 ppt greater probability of moving from not working in the previous month to working in the current month. Job discouragement, defined as being unemployed in the previous month and NILF in the current month, is 6.2 ppt higher for this group.

Wage differentials, though not a focus of this paper except as a potential reason for differences in employment and labor market participation, have been the focus of many previous papers (e.g. Anderson and Shapiro 1996, Browne and Askew 2005, Cunningham and Zalokar 1992, Holzer 1998, McHenry and McInerney 2014, Neal 2004, Pettit and Ewert 2009). An interesting aspect of much of this earlier literature is that for some samples black women's wages have been higher than white women's and this former advantage has disappeared. For the cohorts and ages in this sample, black women's wages measured both annually and at the hourly level are lower than those of white women, with working black women earning on average

$3000/year and $1.75/hour less than similar white women, despite these black women being 6 ppt more likely to be working full-time conditional on working.

Factors Pulling Black Women into the Labor Force

As noted in the introduction, high school educated black women have fewer resources with which to retire. Using the 2010-2012 Health and Retirement Survey (HRS), black women age 50-75 have 27% of the total wealth of comparable white women, with $90,000 in assets compared to $330,000, and have 14% of the total non-housing wealth of white women, with $28,000 in assets compared to $208,000. Additionally, only 57% of black women in this group own a home compared to 81% of white women. Although the racial gap in home ownership, at least for men, was falling over time from 1900 – 1990 according to Collins and Margo (2001), the gap has widened more recently in the HRS data for our group of women from a low of 17% in 1994 to a high of 25% in 2012. This increase in the black-white homeownership gap would suggest an even stronger pull in the labor force for black women compared to white women. Thus, it cannot explain cross-sectional differences in labor force participation, nor can it explain the decrease in black women's employment vis-à-vis white women's with respect to either age or cohort.

Black women are also less likely to have income from other sources upon which to rely in retirement. Subtracting own earned income from total household income in the 2010-2012 HRS and weighting by person weight, older black women high school graduates receive $22,000/year on average compared to $47,000/year for comparable white women. Some of this difference is caused by differences in marital rates between black and white women (42% of black women and 65% of white women in the sample are married). However, this difference in income from other sources exists for both married and unmarried women, with married black

women receiving $37,000 compared to $62,000 for married white women and unmarried black women receiving $11,000 compared to $21,000 for unmarried white women. Although it is difficult to get consistent estimates of other income over time, the relative probability of marriage for black women compared to white women, shown in Figure 5, has been decreasing by cohort for the older women in our sample, suggesting a historical *increase* in this pull factor even as both groups have become less likely to be married.

Along with having fewer resources, these older black women are more likely than white to have dependents at home potentially reliant on their support. In the 2014 Current Population Survey (CPS), 36% percent of these black women have any child at home compared to 24% of white women. As shown in Figure 6, the probability of having any child at home is decreasing with cohort for black women compared to white women, which could plausibly be linked to the similar decrease in the black/ white employment gap by cohort. However, the black/white difference in having any child is also larger for middle age, which means that changes over time in the probability of having a child at home cannot explain why white women have been more likely than black to be employed as they age.

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 increase the demand for older black women given the prevalence of these women in health care fields in previous years, particularly as nursing aides. Figures 7a - 7d show the most common occupations for middle aged women in the 1990 census and older women in this sample the 2009-2011 ACS (population counts for the 10 most common occupations are available in Appendix Table 1). In 1990, the number one occupation for black middle-aged high school graduates was that of nursing aide, while white women were more likely to be employed in clerical positions. While the % of people over the

age of 15 who are clerical workers has decreased since 1970 according to the Census and ACS, the number of people over the age of 15 has more than doubled since 1970. Demand for these fields, at least, would suggest that black women would be more likely to be employed at older ages over time, although the next section discusses the effect of the decline of the manufacturing sector.

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Factors Pushing Black Women out of the Labor Force

Poor health outcomes may lead to inability for these black women to work longer even if they need or desire to do so. In the HRS, female black high school graduates age 50-75 are 9 ppt more likely to report bad health than are comparable whites (34% compared to 25%). Although this measure generally tracks with objective health measures such as mortality rates (Adams et al. 2004, Heiss et al. 2006), there may be some worry about reverse causality when it comes to employment outcomes (that is, people not in the labor force are more likely to claim bad health than those in the labor force). However, even using activities of daily living (ADL) an objective measure that signals poor health (Adams et al. 2004), black women in this age range report .13 more complications with activities of daily living on a 1-5 scale (.35 compared to .22). Using data from the 1992 HRS, Bound et al. (1996) suggest that black women in their 40s and 50s would have greater attachment to the labor force than white women if it were not for health conditions that limit work ability. In the 1994-2012 HRS data, it appears that the black/white difference in self-reported good health has been declining slightly over time, with white women 17 ppt more likely to report good health in 1994-1996, and 9 ppt more likely in 2010-2012. This health gap helps explain cross-sectional differences, but not changes over time.

Another factor leading to the inability to work longer is the fact that jobs historically held by these black women are more physically demanding than those held by similar white women.

While less physically demanding clerical work increased early in the 20th century for both sets of women (Conrad 2005, Cunningham and Zalokar 1992, Goldin 1990, Kaplan et al. 2008, King 1993), white women are still more likely to be in clerical positions. In contrast, the primary occupation for black women high school graduates is nursing aide, a job that is more physically demanding than clerical work. Not separating out by education, Rho (2010) also finds large differences by race in the physical demands for older women workers using O*Net data. In her paper, 38% of black women over the age of 58 are in physically demanding jobs compared to 30% of white women. Interestingly, she finds that the probability of being in a physically demanding job increases with age for black women over the age of 58 rather than decreases. This increase is consistent with a more general decrease in physically demanding jobs over time noted in Johnson et al. (2007). As the number of people employed in clerical positions has gradually declined starting in the later part of the 20th century, the black-white difference for older high school graduate women has also declined. At the same time, with the rapid increase in nursing aide positions, although white women have been moving into these positions, black women have been increasing their employment numbers more rapidly, leading to an increase in the black-white ratio. For these two positions at least, it is possible that differences in physical demands of the occupation can explain cross-sectional, age-based, and cohort based differences by race in employment at older ages.

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Lower hourly wages for black women may lower the returns to work especially given higher Social Security replacement rates for those with lower incomes and access to Social Security income. Indeed, Biggs and Springstead (2008) find that the lowest quintile of earners has a >100% replacement rate, while the second quintile is within the recommended 67-81% replacement rate (Munnell, Webb, and Delorme 2006). Using computed hourly wages (annual

income/weeks worked/usual weekly hours in the previous year) conditional on working in the 2010-2014 ASEC and not adjusting for top-coding or wages below minimum wage, black women in the sample earned $16/hr on average compared to $18/hr for white women. For hourly workers who reported their wage rate directly, white women earned $14/hr on average while black women earned $13.75. A kernel density plot of these data by race in Figure 8 shows how black women's hourly earnings are shifted left. 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. Over time, viewing cohort charts for the wages of full-time workers, as in Figure 9, the difference in the black/white full-time wage rate decreases by age and by cohort for older workers in our sample. If we take this wage rate as given, it too can help explain different choices cross-sectionally, over time, and by age in employment rates.

In addition to having higher income replacement rates from Social Security, older black women also receive more additional government assistance, taking home, on average an additional $155 ($345 compared to $191) per year from VA, TANF and foodstamps according to the 2012 HRS. They are also 7 ppt more likely to be receiving SSI/SSDI benefits (15% compared to 8%). In terms of trends over time, Social Security generosity has been decreasing over time and across cohorts (Butrica et al. 2003/2004). Moffitt (2015) notes that welfare spending has been increasing since a pause in the 1970s. However, this 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 an increase towards disability

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programs which may favor older black women (who are more likely to be disabled) over older white women.

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% higher mortality than white at age 65. While 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 (see Hummer and Chinn 2011 for a literature review), although Harper et al. (2007) found the gap to narrow by a year for women between 1993 and 2003. While higher adult mortality for black women can help explain cross-sectional differences in employment at older ages, the steady or possibly narrowing adult mortality gap goes in the opposite direction of changes in relative employment over time.

Finally, although health care sector jobs are in high demand, black women high school graduates were more likely than white to be in manufacturing jobs in their youth and middle age. The decline of this sector beginning in 1979[2] provides an additional push factor for women who had been previously trained for these positions. Similarly, the personal service industry has not yet recovered from the steep decline that ended in the 1980s and differentially affected black women, though in the case of personal service it is more likely that widening opportunities for black women in clerical, manufacturing, and health sectors led to the decline in personal service rather than the other way around (Conrad 2005, Goldin 1990, Kaplan et al. 2008 and authors calculations from the Census).

Factors With Ambiguous Labor Force Predictions

[2] Author's calculations from BLS Consumer Expenditure Survey Establishment Data http://www.bls.gov/webapps/legacy/cesbtab1.htm. Last accessed 5/1/2016.

While the above factors have clear theoretical predictions, other factors have more ambiguous predictions for older workers. For example, while numerous empirical studies demonstrate race discrimination against younger entry-level workers, 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. Given recent news reports about violence against black youth, we might expect animus against black people to decrease with the age of the worker. However, statistical discrimination predictions could go either direction based on whether positive or negative stereotypes of older black women compared to 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, although black women and white women are about equally likely to be working conditional on poor health, the higher incidence of self-reported poor health among black women may increase negative employer stereotypes about the health of black workers.

Changes in education over time may also affect black and white women high school graduates differently. While this sample was cut by education specifically to lessen the effect of both white and black women's movements from high school education into college, selection into education group still has at least a second order effect on the work outcomes for these groups. Black and white women in these older cohorts faced different educational inputs and opportunities (e.g., Carruthers and Wanamaker 2013, Conrad 2005, Margo 1990). Lower quality of K-12 education during the Jim Crow era and later would make black women high school graduates less attractive as employees than white women. However, educational hurdles might keep higher ability black women from getting college education while similar ability white

women would earn higher degrees. Thus selection could increase the average ability of a black woman in this education group vis-à-vis a similarly educated white woman.

The national decline in unionization (Mishel 2012) also has ambiguous predictions for black women's labor force participation compared to white. Black women in the 2014 CPS sample are about 2 ppt more likely to be in a union than white (14% compared to 12%). While union jobs are "better" jobs with higher wages and more benefits that make 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% more likely to receive pension benefits (Pierce 1999).

Discussion and conclusion

Understanding the dynamics of labor force participation of older black women, particularly those with high school education but no additional degrees is important from a policy perspective. While labor market outcomes for young black workers have been studied extensively, more research needs to be done on differential outcomes by age. As people work longer this becomes more important.

Older black high school graduate women have worse employment outcomes, worse health, and fewer resources than comparable white women. As such, they are more likely to need government assistance. This 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 compared to similar white women.

Moving forward, as middle-aged workers become older women themselves, they will benefit from cohort changes. Current middle-aged black women are still more likely to be employed and more likely to be in the labor force compared to similar white women, but less so

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By separating age from cohort effects and looking at patterns among middle-aged women along with predictions about the previously identified push and pull factors, we may be able to say something about the labor force outcomes for future cohorts of older women. Here we define middle-aged as ages 35-49.

The future of push factors

Unfortunately we do not have reliable information on health differences before age 50 in the HRS. However, a large literature on racial disparities suggests that health differences start early and may be decreasing over time. *do we know if they're increasing or decreasing over time? Indeed/however* some literature suggests that the de facto desegregation of hospitals should (CITE STUFF ABOUT LIFE EXPECTENCY HERE).

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Discussion from literature review on what is happening to wages for black women controlling for education. Increasing inequality going forward? This next election may be important with minimum wage.

Social Security will probably retain its progressivity, but who knows.

Literature review for mortality.

The future of pull factors

i. Former Pull factors
   1. Continued lower wealth, continued marriage gap => continued lack of outside resources => continued pull
   2. Black women less likely to have a child at home in middle age, but so did previous cohorts at middle age. Current cohorts are following pattern of fewer children in middle age, more in older age (though suggestions that the trend may be less stark going forward)

3. The ability of workers to remain employed in the same occupation as they age should be related to the projected demand for that occupation. Figure XX provides a visual representation of census counts for the most popular occupations for middle-aged workers in our education sample by race. The BLS Occupational Handbook provides predictions on the growth outlook for these different occupations indicating whether the fields they are represented in will be growing or shrinking as they age. The most popular occupations for currently middle-aged black women high school graduates is, in decreasing order of popularity, that of nursing aides, secretaries, and cooks, occupations predicted to growths of 18%, 3%, and 4%, in comparison with the average over all ... [1]

than were older cohorts when they were middle-aged. Similarly, although the difference by race in middle-aged full-time earnings is not as bad for middle-aged black high school graduates as it is for older women, it is still worse than it was for earlier cohorts when they were middle-aged.

Unfortunately, the relative picture for younger cohorts is not much better than that for currently middle-aged cohorts. 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 to white women.

This chapter has traced out different pull and factors for high school graduate black women's labor force participation compared to white women's to explain both cross-sectional reasons for black women's lower employment compared to white, as well as changes in age and over time. Although most factors discussed can help explain cross-sectional differences, many of these factors are not changing in a way that would predict older white women's employment surpassing that of black women's. Exceptions include differences in occupational demand, particularly in physically intensive jobs, that may lead to greater inability to work at older ages for black women, lower wages for black women making work less attractive, and potential increases in government income from disability programs coupled with black women's worse health. The effect of changes in education and unionization could potentially affect black women's labor force participation differentially as well, though it is not clear which direction. Similarly, very little work either theoretically or empirically has been done exploring race discrimination against mature workers, and is an area for which more research is needed.

Finally, 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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Table 1: Summary Statistics

	Black	White	Difference
2014 CPS ASEC			
Employed	0.425	0.433	-0.007
NILF	0.536	0.548	-0.012
Unemployed	0.084	0.044	0.040
Annual wage income>0	27,452	30,567	-3,116
Full-time vs. Part-time (FT=1)	0.778	0.715	0.064
Hourly wages all workers	16.40	18.17	-1.78
Hourly Wage hourly workers	13.75	14.10	-0.34
Any child	0.364	0.236	0.128
In union	0.069	0.097	-0.028
2013 Matched Monthly CPS			
Accession (hired)	0.036	0.025	0.011
Separation (left job)	0.021	0.017	0.003
Discouraged (unem->NILF)	0.299	0.236	0.062
2010-2012 HRS			
Total household wealth	89,567	333,078	-243,512
non-housing wealth	27,563	203,553	-175,990
own home	0.57	0.82	-0.25
non-wage income			
all	22,261	47,370	-25,109
married	37,388	61,794	-24,406
unmarried	11,134	21,136	-10,002
bad self-reported health	0.34	0.25	0.09
ADL (1-5 scale, 5 bad)	0.35	0.22	0.13
VA/welfare/TANF income	345	191	155
SSI/DI	0.15	0.08	0.07

Note: Estimates are for women age 50-75 with high school degrees or GED including those with less than one year of college education. Estimates are adjusted by sampling weight or person weight. Wages are inflated to 2014$ and are not adjusted for top-coding or unusually low wages. Hourly wages for all workers were created from last year's annual income/weeks worked/usual hours worked and are reported for the 2010-2014 ASEC. Hourly wages for hourly workers are reported directly. Both are reported conditional on positive wages.

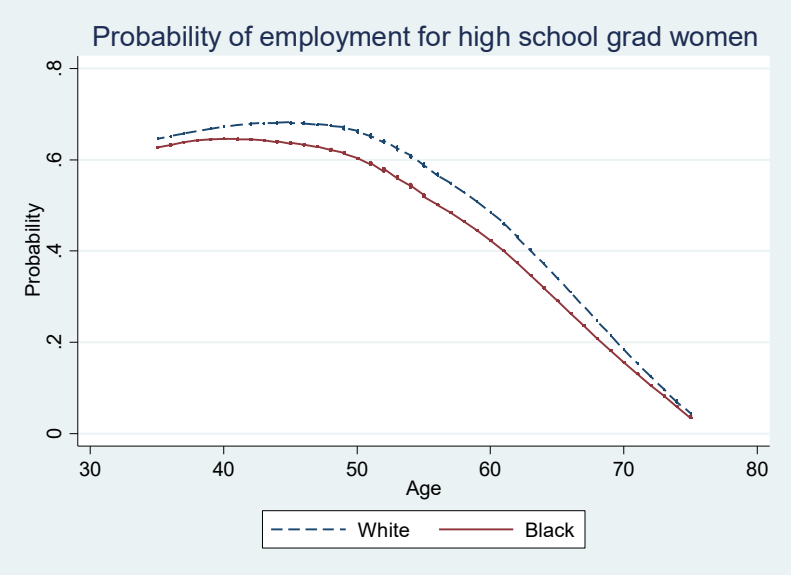

Probability of employment for high school grad women
Probability
0
.2
.4
.6
.8
30
40
50
60
70
80
Age
White
Black

Figure 1

Figure 2: Difference in Probability of Employment:
High School Graduate Black Women Compared to White Women

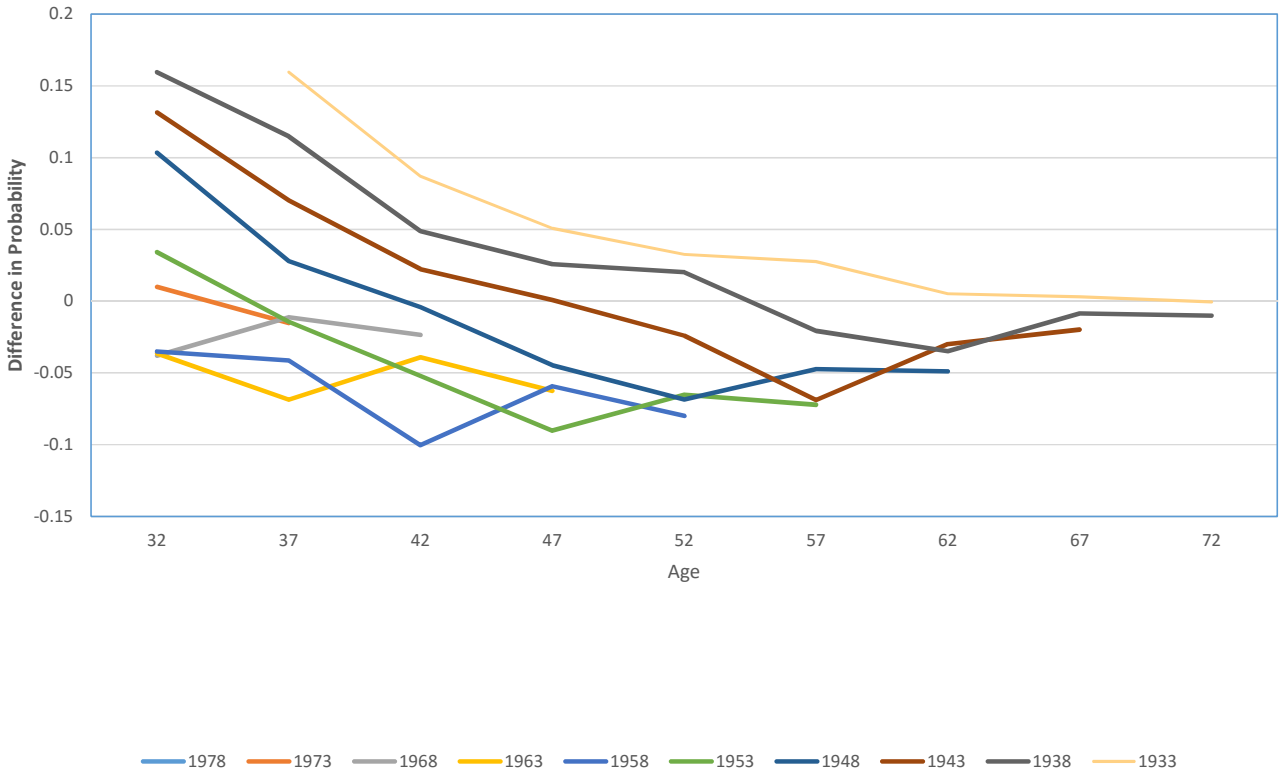
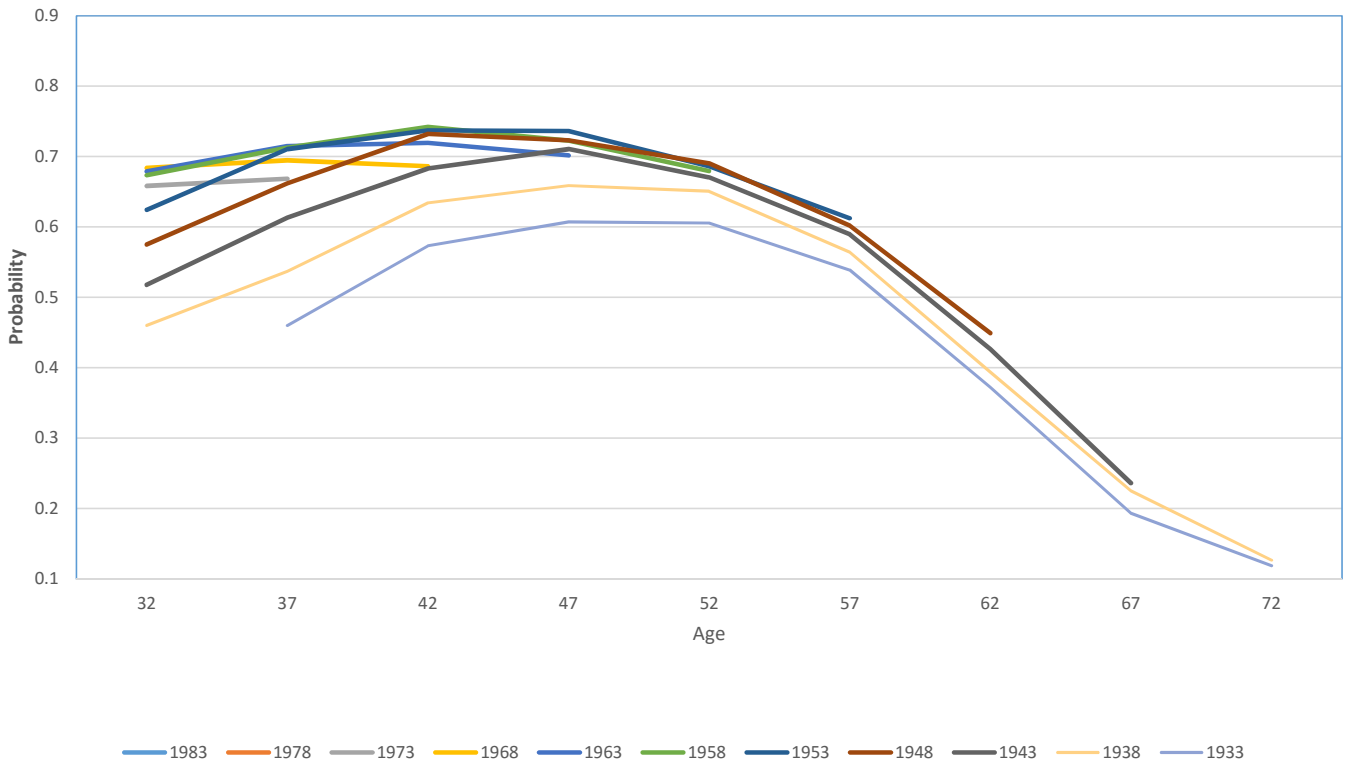


Figure 3: Probability of Employment:
High School Graduate White Women



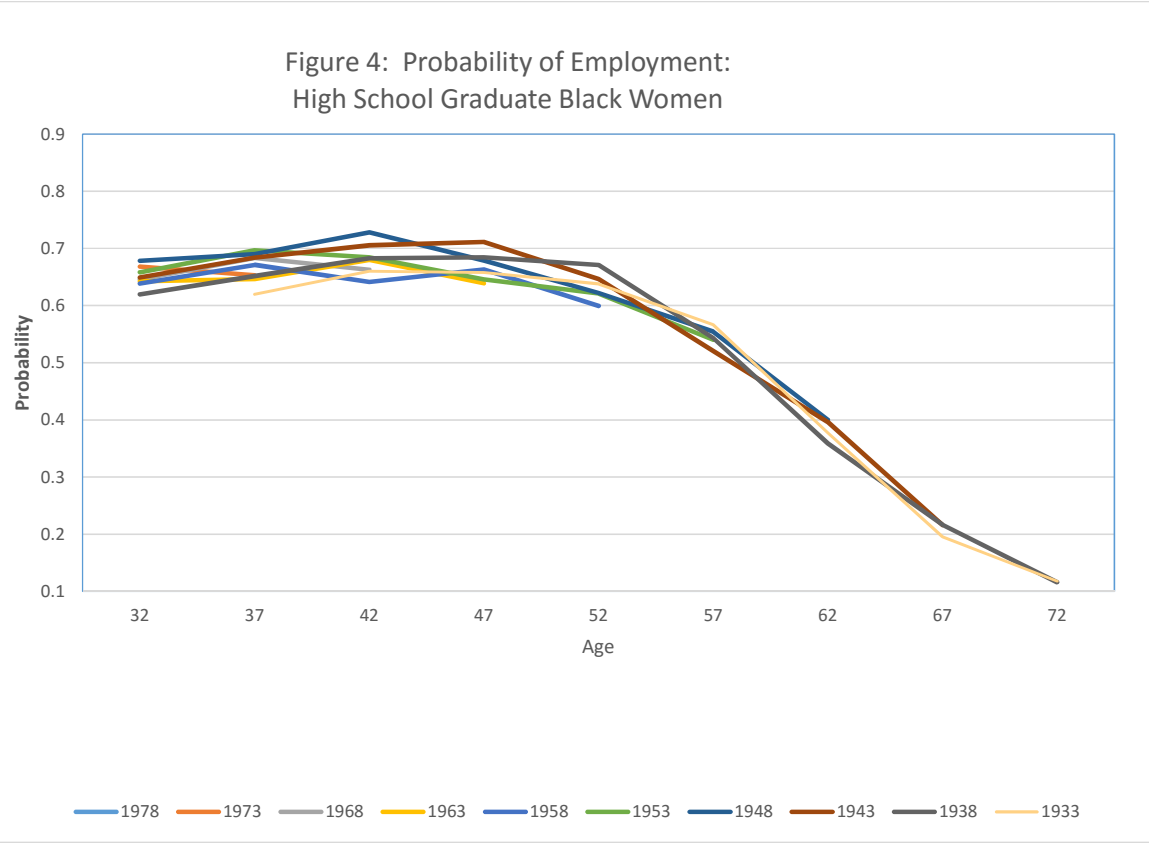
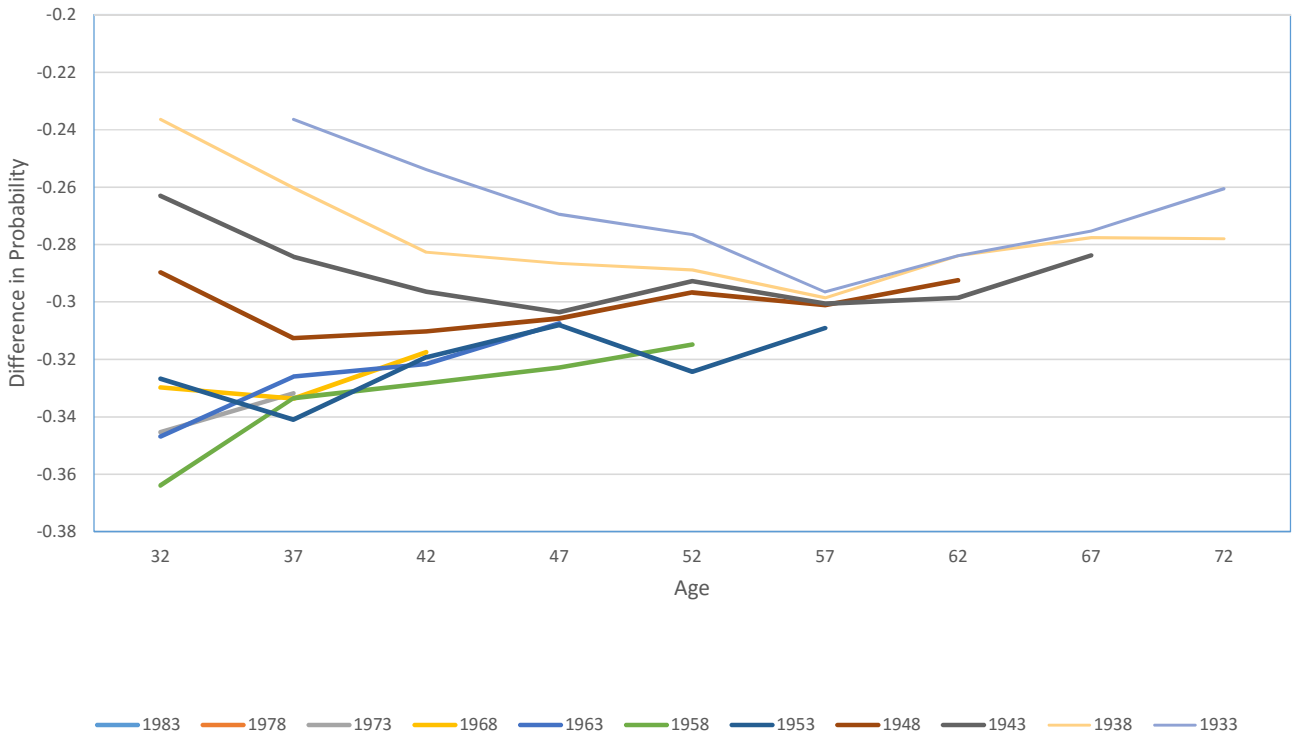
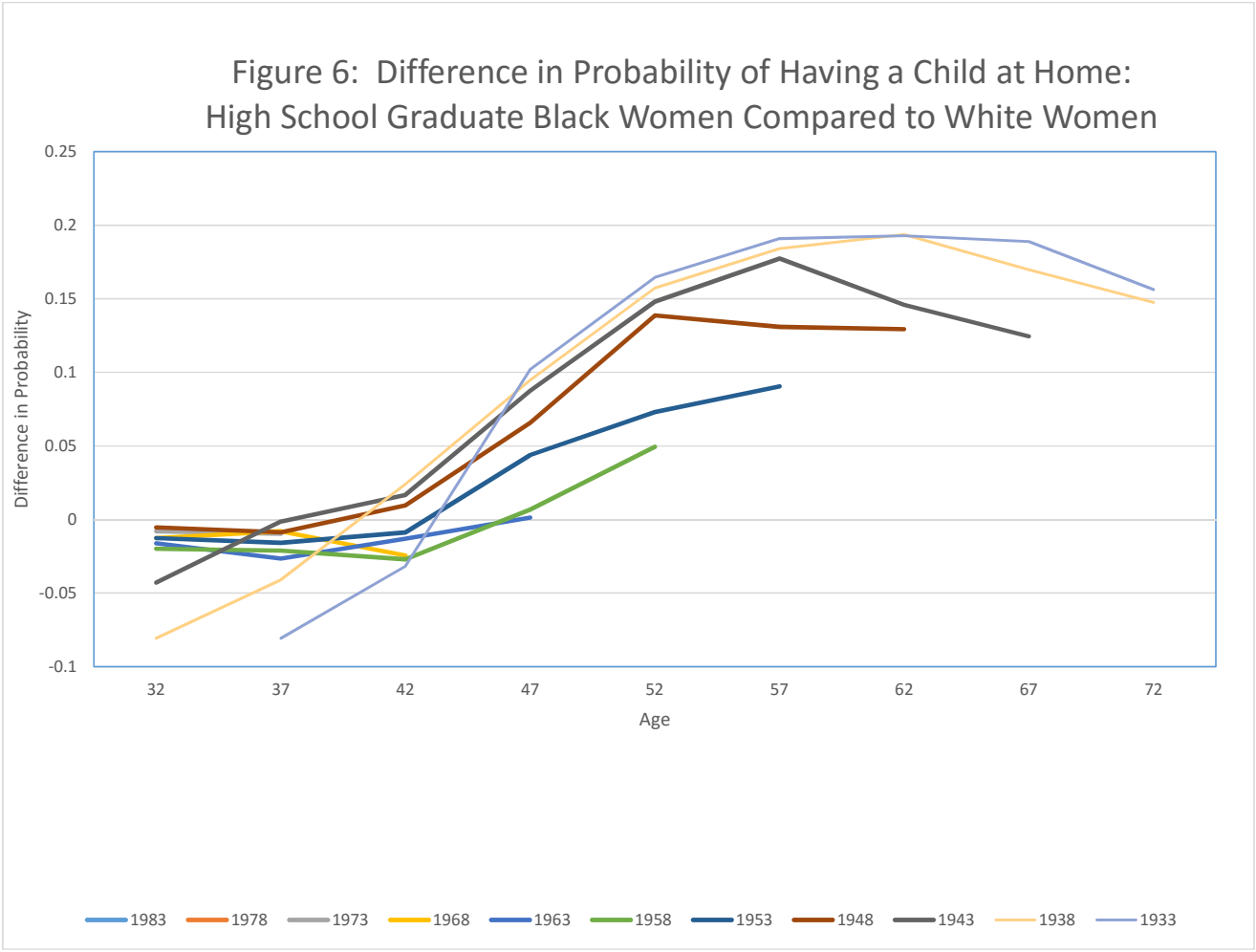
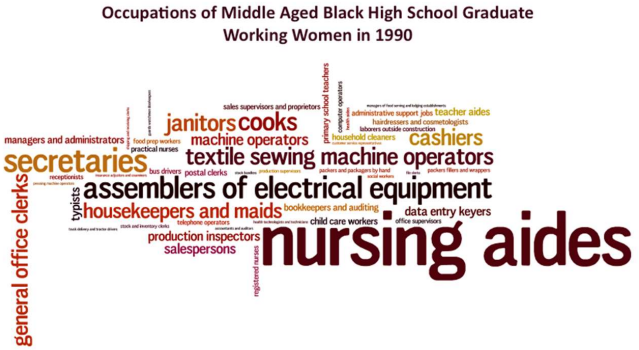
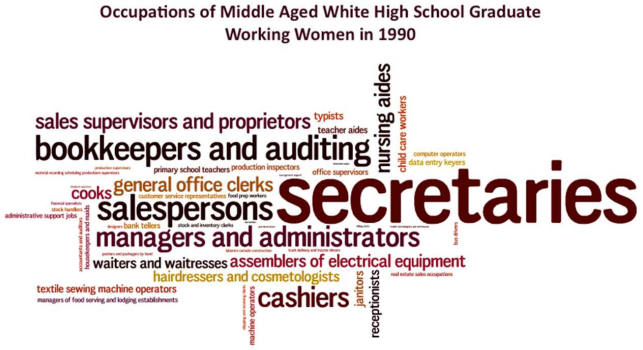

Figure 4: Probability of Employment:
High School Graduate Black Women
Probability
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
32
37
42
47
52
57
62
67
72
Age
1978
1973
1968
1963
1958
1953
1948
1943
1938
1933

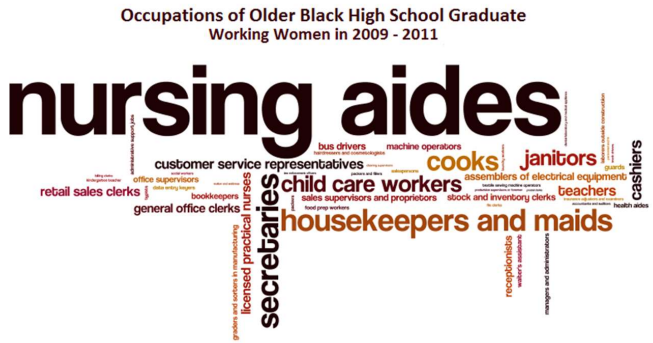
Figure 5: Difference in Probability of Being Married:
High School Graduate Black Women Compared to White Women




Figure 6: Difference in Probability of Having a Child at Home:
High School Graduate Black Women Compared to White Women
Difference in Probability
0.25
0.2
0.15
0.1
0.05
0
-0.05
-0.1
32
37
42
47
52
57
62
67
72
Age
1983
1978
1973
1968
1963
1958
1953
1948
1943
1938
1933









Figures 7a-7d. Wordle size represents relative size of occupational differences for each of the top 50 occupations per race/age/year group.

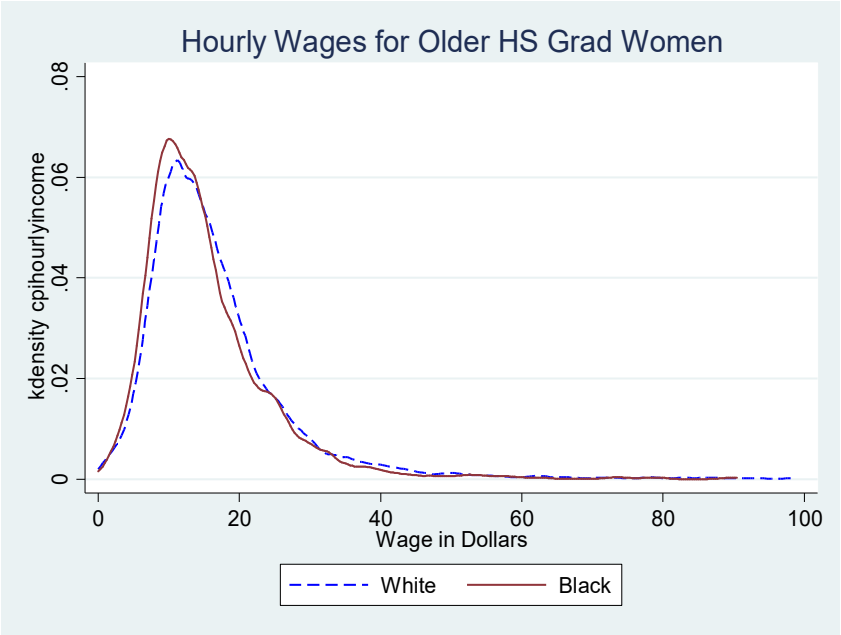
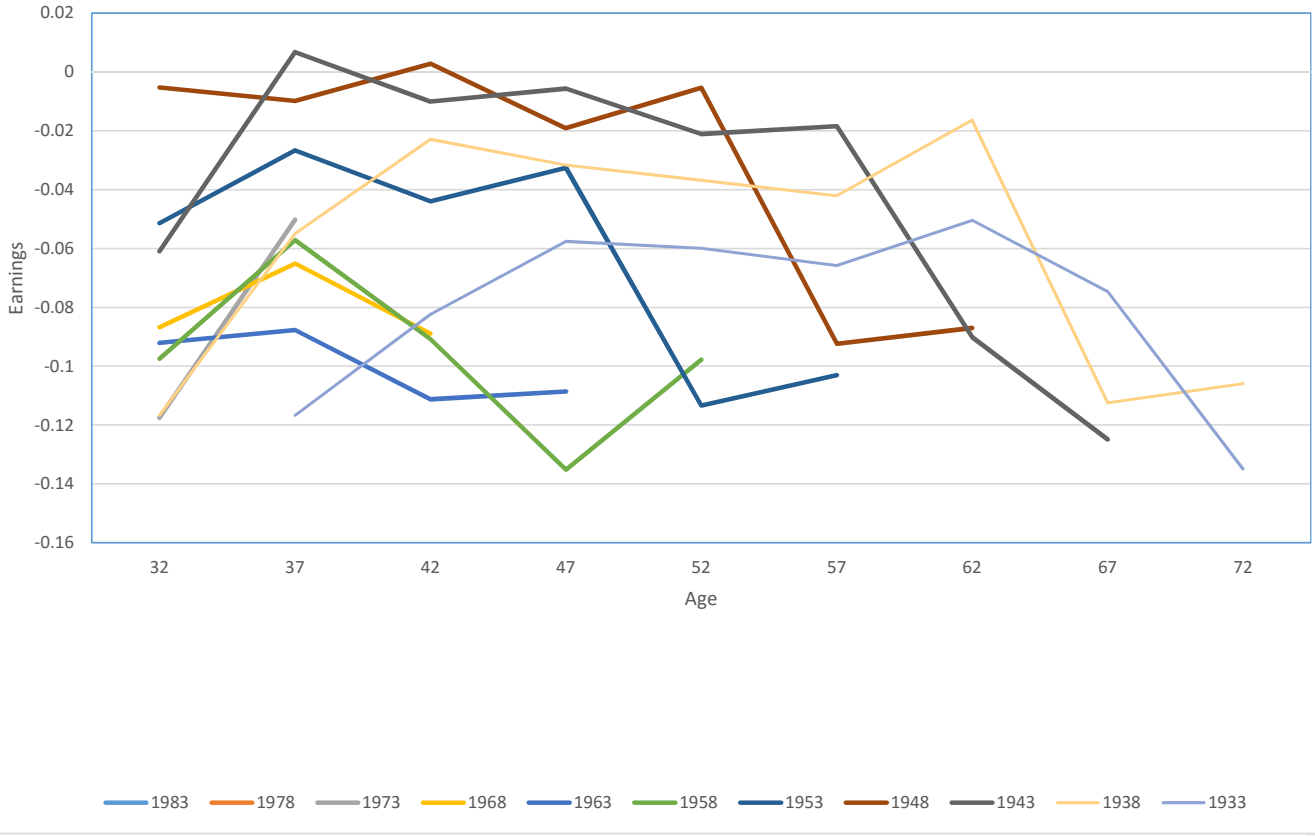

Hourly Wages for Older HS Grad Women
kdensity cpihourlyincome
0
.02
.04
.06
.08
0
20
40
60
80
100
Wage in Dollars
White
Black

Figure 8

Figure 9: Difference in ln Earnings of Full-Time Women:
High School Graduate Black Women Compared to White Women



Appendix Table 1: Top 10 occupations

Black		White	
Women age 50-75 in the 2009-2011 ACS			
nursing aides, orderlies, and attendant	494,794	secretaries	2,647,131
secretaries	159,734	nursing aides, orderlies, and attendant	1,075,175
housekeepers, maids, butlers, stewards	156,084	bookkeepers and accounting and auditing	994,108
cooks, variously defined	138,325	cashiers	919,971
child care workers	116,901	retail sales clerks	852,973
janitors	110,853	supervisors and proprietors of sales jo	753,898
cashiers	85,719	receptionists	658,272
teachers , n.e.c	75,165	customer service reps, investigators an	654,467
customer service reps, investigators an	71,866	teachers , n.e.c	611,399
licensed practical nurses	67,598	general office clerks	609,237
Women age 35-49 in the 1990 Census			
nursing aides, orderlies, and attendant	77,842	secretaries	620,747
secretaries	35,536	salespersons, n.e.c	269,663
assemblers of electrical equipment	32,894	bookkeepers and accounting and auditing	253,363
cooks, variously defined	27,163	cashiers	212,495
janitors	25,938	managers and administrators, n.e.c	210,132
textile sewing machine operators	25,790	supervisors and proprietors of sales jo	164,444
cashiers	24,091	nursing aides, orderlies, and attendant	160,525
general office clerks	23,373	general office clerks	159,714
housekeepers, maids, butlers, stewards,	22,971	cooks, variously defined	137,685
machine operators, n.e.c	17,999	assemblers of electrical equipment	137,136

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

Predicting future age trends

By separating age from cohort effects and looking at patterns among middle-aged women along with predictions about the previously identified push and pull factors, we may be able to say something about the labor force outcomes for future cohorts of older women. Here we define middle-aged as ages 35-49.

The future of push factors

Unfortunately we do not have reliable information on health differences before age 50 in the HRS. However, a large literature on racial disparities suggests that health differences start early and may be decreasing over time. *do we know if they're increasing or decreasing over time? Indeed/however* some literature suggests that the de facto desegregation of hospitals should (CITE STUFF ABOUT LIFE EXPECTENCY HERE).

This paragraph should be about movement into/away from physically intensive occupations. DEMAND should go in the next section. Talk about "The BLS Occupational Handbook provides predictions on the growth outlook for these different occupations indicating whether the fields they are represented in will be growing or shrinking as they age." Wrt physically demanding occupations. *Wordles here for middle-aged.*

Discussion from literature review on what is happening to wages for black women controlling for education. Increasing inequality going forward? This next election may be important with minimum wage.

Social Security will probably retain its progressivity, but who knows.

Literature review for mortality.

The future of pull factors

i. Former Pull factors
    1. Continued lower wealth, continued marriage gap => continued lack of outside resources => continued pull
    2. Black women less likely to have a child at home in middle age, but so did previous cohorts at middle age. Current cohorts are following pattern of fewer children in middle age, more in older age (though suggestions that the trend may be less stark going forward)

3. The ability of workers to remain employed in the same occupation as they age should be related to the projected demand for that occupation. Figure XX provides a visual representation of census counts for the most popular occupations for middle-aged workers in our education sample by

race. The BLS Occupational Handbook provides predictions on the growth outlook for these different occupations indicating whether the fields they are represented in will be growing or shrinking as they age. The most popular occupations for currently middle-aged black women high school graduates is, in decreasing order of popularity, that of nursing aides, secretaries, and cooks, occupations predicted to growths of 18%, 3%, and 4%, in comparison with the average over all occupations of 7%. The most popular occupations for similar white women, in decreasing order of popularity, are secretaries, nursing aides, and bookkeeping and accounting, which are predicted to have growths of 3%, 18%, and -8% (decline), respectively. Thus, both groups will benefit from the increased demand for nursing aides. Something about increased demand for health aides has increased their popularity among white women, but black women still hold a relative advantage. That may not continue to be true.

ii. Selection
    1. increases in quality of inputs (schooling, etc.) => helps relative b/w outcomes
    2. Increasing attrition by race into college graduate category over time, first white women, then black women (Conrad 2005, Goldin 1990, Neal 2004) => given SBTC, this probably hurts relative b/w outcomes for this group

iii. Discrimination (Theory, not much literature on empirics)
    1. Less taste-based discrimination? Cultural differences in how Americans view black women of different ages
    2. Statistical discrimination? Different stereotypes? Will these change moving forward?