Wage Disparities and Industry Segregation: A Look at Black-White Income Inequality from 1950-2000

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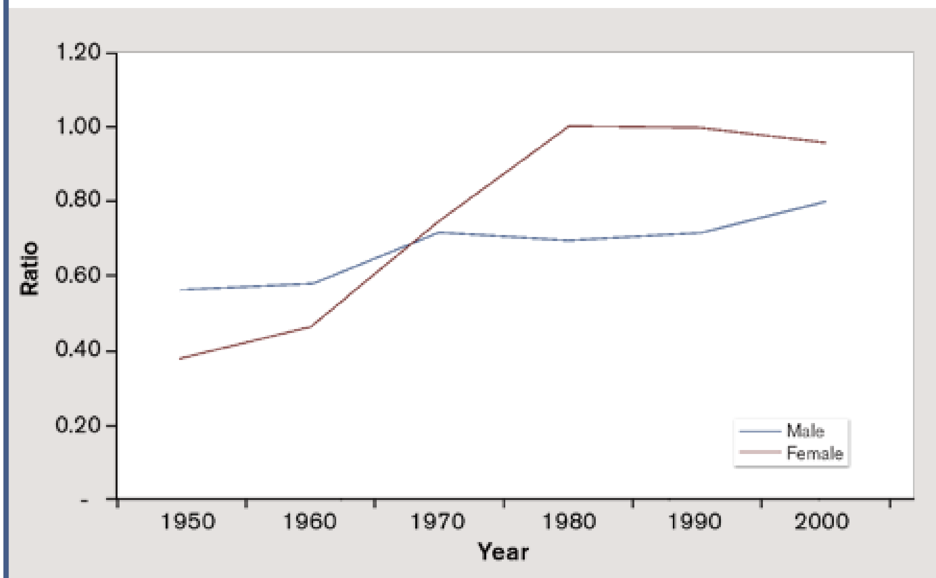
Introduction

The last sixty years has been a period of profound change for Black Americans. In the 1950s and 1960s, Supreme Court cases and federal legislation eliminated many unfair and discriminatory laws passed over the course of the prior century that had effectively subordinated Black Americans to second class citizenship. A variety of social and economic conditions have changed during the roughly six decades since the modern Civil Rights Movement began, in part as a result of these decisions, and significant shifts in cultural norms and beliefs, as well. The purpose of this article is to explore some of the economic ramifications of this change, focusing specifically on the labor market and changes in income differentials between Black and White Americans during the period.

Figure 1: Ratio of Black/White Median Wage



SOURCE: Ruggles, Steven, Matthew Sobek, Trent Alexander, Catherine A. Fitch, Ronald Goeken, Patricia Kelly Hall, Miriam King, and Chad Ronnander. *Integrated Public Use Microdata Series: Version 4.0* (Machine-readable database). Minneapolis, Minnesota: Minnesota Population Center (producer and distributor), 2008.

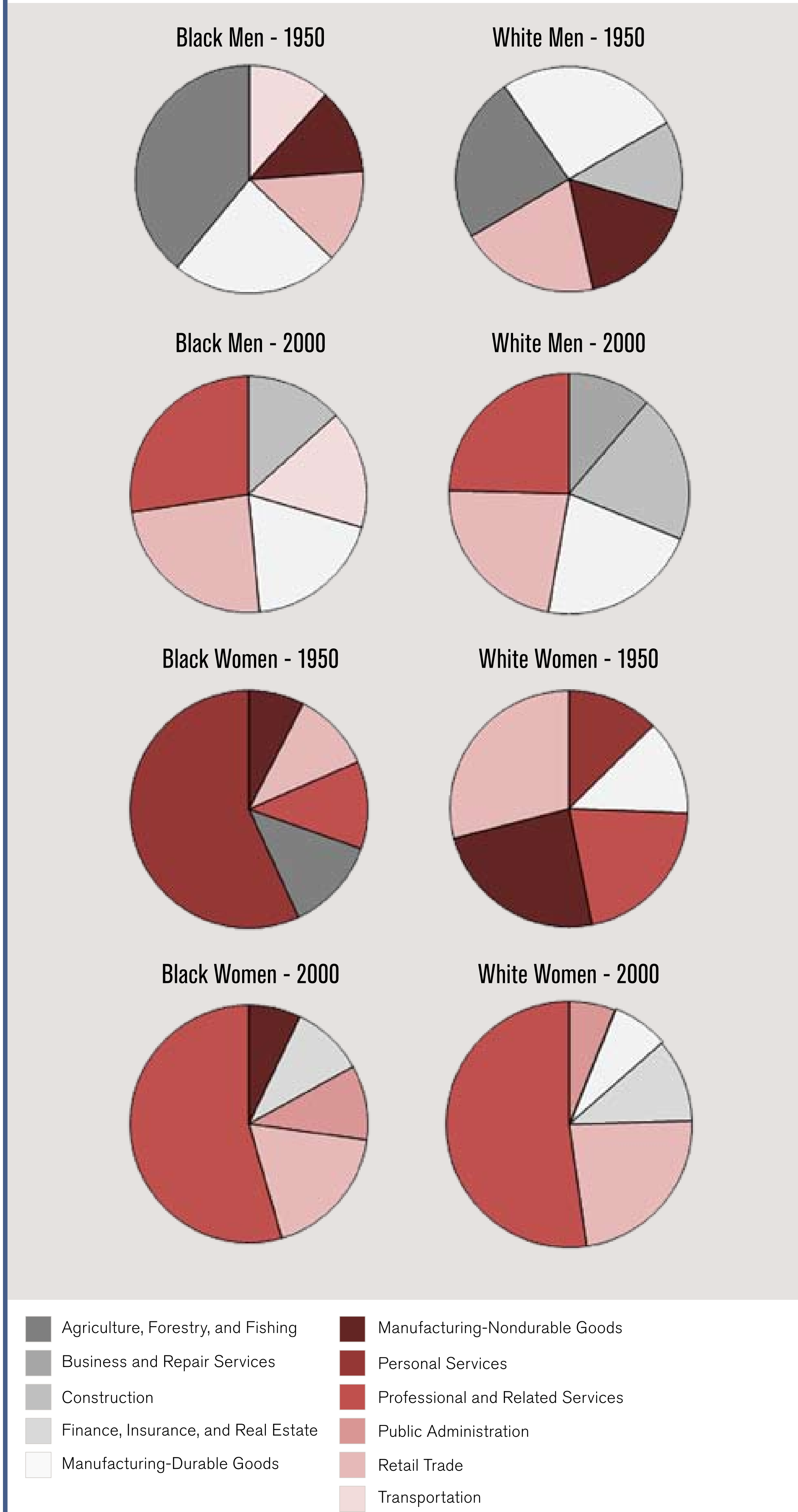
Figures 1 and 2 illustrate two important, labor-related economic facets of life for Black Americans. The first figure is a graph of the ratio of the median wages for Black and White men and women from 1950 through 2000. The second figure is a series of pie charts showing the top five industries employing Black and White men and women in 1950 and 2000. Both figures illustrate important trends. First, the ratio of difference between the wages Black and White workers earn, decreased over the period. Second, the compositions of industries employing Black and White workers were drastically different in 1950, but much more similar by 2000. This article is a closer look at the data underlying these two figures, and how changes in employment in major industries and wage structure in these industries have impacted income differences between Black and White workers.

Framework

This article presents changes in income inequality as the outcome of two forces: industry segregation[1] and wage differentials within industries. The basic premise is that the level of segregation in an industry impacts the overall (median) wages of demographic groups; for instance greater participation in a relatively higher paying industry impacts the median wage for a demographic more than one in which that demographic participates relatively less. Figure 3 presents three hypothetical examples that illustrate this point.

In the first two cases, 200 Black and White workers are employed across two different industries. Case 1 indicates total segregation, where all Black workers are employed in Industry A, while all White

Figure 2: Employment Shares in Five Largest Industries



workers are employed in industry B. However, since both industries pay the same wage to both workers, the average wage is identical. Case 2 illustrates the opposite circumstance. Black and White workers are employed equally in both industries, but Black workers earn less than White workers – an average of $10,000 less annually. While Case 1 and 2 are simple examples, Case 3 underscores the complex interaction between segregation and wage differentials. In this example, there are 500 Black and White workers employed across four different industries. In each industry, both Black and White workers earn the same wage. However, while industries A through C are less segregated than in Case 1, the acute segregation in industry D results in White workers earning on average $12,500 more than Black workers.

These examples illustrate that income inequality is a complex phenomenon that is responsive to the degrees of segregation and wage differentials among industries. The analysis presented here will focus on the degree of segregation and wage differentials across and within industries, how these values changed over time, and ultimately how the changes impacted income inequality. It is important to note that the underlying causes of industry (and societal) segregation are not part of the analysis or purpose of the article. Rather, the goal is to identify if and where industry segregation and wage differentials exist, and their impact on income inequality at different times.[2]

Data and Methodology

All of the data for this article came from the 1 percent public use samples of the decennial census, from 1950 through 2000.[3] For each year, the data was organized as follows. First, the dataset was restricted only to people who were currently employed, so that the data would accurately reflect labor market conditions current to the time period.[4] Second, wage data was converted into (year) 2000 dollars. Every industry was then classified into 17 composite categories, according to the Integrated Public Use Microdata Series IPUMS aggregation rule.[5] The data was then disaggregated into four demographic groups: Black men, Black women, White men, and White women.

For each decade, the percentage of people employed and the median wage in every industry was then calculated for each demographic group, providing the focus for the analysis. Finally, industries were ranked in each decade by the percentage of the population employed in each demographic group. To clarify and expedite the analysis, of these 17 industries, only the top five were analyzed, as attempting to examine and draw inferences about the 408 work group units that result from tracking all 17 industries[6] would have been too unwieldy.[7]

Figure 3: Hypothetical Cases

	Black		White	
Industry	People	Income	People	Income
Case 1: Total segregation, no wage difference				
A	200	$50,000	0	
B	0		200	$50,000
Average		$50,000		$50,000
Wage Differential	**0**			
Case 2: No segregation, large wage difference				
A	100	$40,000	100	$50,000
B	100	$30,000	100	$40,000
Average		$35,000		$45,000
Wage Differential	**$10,000**			
Case 3: High segregation, no wage difference				
A	150	$25,000	100	$25,000
B	150	$25,000	100	$25,000
C	150	$35,000	100	$35,000
D	50	$70,000	200	$70,000
Average		$32,500		$45,000
Wage Differential	**$12,500**			

SOURCE: Ruggles, Steven, Matthew Sobek, Trent Alexander, Catherine A. Fitch, Ronald Goeken, Patricia Kelly Hall, Miriam King, and Chad Ronnander. *Integrated Public Use Microdata Series: Version 4.0* (machine-readable database). Minneapolis, Minnesota: Minnesota Population Center (producer and distributor), 2008.

Black Men

Figure 4 shows the top five industries and corresponding population percentages and median wages for Black and White male workers from 1950 through 2000. In studying the Black male labor market, it is helpful to analyze it in two periods: 1950-1960, and 1970-2000. In 1950, the predominant industry for Black employment was Agriculture, Forestry, and Fishing. This industry is an important one for understanding the trends in income inequality for Black men for a number of reasons. First, it employed the largest proportion of Black males (27 percent) of any industry. Second, the wages were the lowest of the major industries, with Black men earning just over $2,000 a year–the lowest wage of any of the largest industries. Third, almost half as many White men were employed in this industry, and those who were earned 50 percent higher wages than Black men. Finally, in three of the other five major industries, White workers earned 50 percent higher wages than Black workers. The combination of high segregation, low wages, and sizable wage disparities resulted in Black men earning 60 percent[8] of the wage of White men.

In 1960, the number of Black men employed in Agriculture, Forestry, and Fishing dropped from 27 percent to 12 percent. However, Figure 1 indicates that this change had a relatively small effect on wage differentials. Why did this drop not have a larger impact on reducing income inequality? Although better than in the previous decade, the average wage of the Agriculture, Forestry, and Fishing sector was still very low at $3,500 a year. Further, although its significance had diminished, the industry was still the second largest employer of Black men. More importantly, wage differentials increased in other industries. In every other industry, the wages of White workers increased by a larger percentage than Black workers. This is seen most clearly in Construction, where Black wages increased by $2,000 while White wages increased by $8,000, and Manufacturing, where Black wages increased by around $5,000 compared to the White wage increase of around $10,000. While Black men made modest gains in Agriculture, Forestry, and Fishing, they lost ground in every other industry, resulting in an insignificant change in income inequality.

The decade from 1960 to 1970 was perhaps the most important decade for Black men for two reasons. First, it saw the largest improvement in wage disparities, with Black men earning 58 percent of White men's wages in 1960, and 72 percent in 1970. This improvement derives from two principal trends. First, Agriculture, Forestry, and Fishing ceased to be a major employer for Black men, and were replaced by Professional and Related Services, which offered a wage over six times higher than the Agriculture, Forestry, and Fishing sector. Second, the

Figure 4: Men

		1950		1960		1970		1980		1990		2000	
		Emp	Inc	Emp	Inc	Emp	Inc	Emp	Inc	Emp	Inc	Emp	Inc
Agriculture, Forestry, and Fishing	Black	27%	$2,093	12%	$3,536								
	White	15%	$3,110	8%	$5,027								
Business and Repair Services	Black											8%	$18,800
	White											7%	$26,500
Construction	Black	8%	$10,150	9%	$12,309	8%	$18,387	8%	$18,524	8%	$17,472	8%	$19,400
	White	8%	$14,350	8%	$22,614	8%	$32,007	10%	$27,780	11%	$25,536	12%	$25,000
Manufacturing-Durable Goods	Black	16%	$13,650	16%	$19,179	18%	$27,467	18%	$28,798	13%	$26,880	11%	$26,500
	White	17%	$20,650	19%	$29,484	18%	$37,455	18%	$39,350	15%	$37,156	13%	$35,500
Manufacturing-Nondurable Goods	Black	8%	$12,950	9%	$17,461	9%	$22,927	11%	$25,466	9%	$24,849		
	White	11%	$19,950	11%	$28,911	9%	$36,547	9%	$37,036	7%	$36,217		
Professional and Related Services	Black					9%	$22,927	13%	$23,152	15%	$23,520	16%	$25,000
	White					10%	$32,007	13%	$31,251	13%	$33,600	15%	$35,000
Retail Trade	Black	9%	$9,450	10%	$11,736	9%	$18,387	10%	$16,210	13%	$13,440	14%	$16,000
	White	13%	$12,950	12%	$17,461	12%	$24,743	13%	$22,897	14%	$20,160	14%	$21,000
Transportation	Black	8%	$14,350			8%	$29,737	9%	$35,462	9%	$30,770	10%	$29,000
	White	8%	$21,350			6%	$36,547	6%	$42,126	6%	$36,288	6%	$35,000

*All numbers are medians except Agriculture, Forestry, and Fishing, which are averages.
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resurgence of the Transportation industry which, with a median wage of almost $30,000, was over eight times higher than the median wage of Agriculture, Forestry, and Fishing.

More importantly, the wage increases in these two industries corresponded with a more pervasive trend: the wage differentials within other industries narrowed. Unlike the previous decade, where Black wages stagnated, in every major industry[9] the aggregate wage for Black men increased more than that of White men. The largest change occurred in the Transportation industry, where Black men earned 81 percent of the wage of White men. Other industries saw the wage gap fall between three and eight percentage points. The decade that ended in 1970 also showed a marked decrease in industry segregation; by 1970 three industries employed the same proportions of Black and White men. Accordingly, an overall decrease in wage inequality corresponded with the reduction of wage disparities and industry segregation.

Despite these positive developments for Black men, the second reason that 1970 marked an important change is that since then, little progress has been made in reducing income inequality. In

1970, Black men earned 72 percent of the wage that White men earned; 20 years later, this ratio remained unchanged. This condition had more to do with the dynamics of wage growth within industries than race differentials between industries. From 1970 to 1990, the wages of Black men increased relative to White men in the Construction, Nondurable Goods Manufacturing, and Transportation industries, while their relative wages fell in the Durable Goods Manufacturing and Retail Trade sectors. Remarkably, the percentages of Black men employed in these two groups of industries were almost identical to each other in every decade: 25 percent versus 26 percent in 1970, 28 percent versus 29 percent in 1980, and 27 percent each in 1990. Since Black men were equally employed in both sets of these industries, the effect of the positive wage gains in the first group were nullified by the negative wage losses in the second. It was only in 2000 that Black men again made real progress in the labor market, reducing the disparity of Black wages to 80 percent of White wages. Similar to 1970, this improvement was lead by wage gains in the majority of the major industries; the Transportation sector was the only one to see a (very small) decline in relative wages for Black men.

What is perhaps most interesting about the Black labor market is that industry segregation did not significantly affect income inequality. Aside from Agriculture, Forestry, and Fishing in 1950, every industry in every decade employed almost identical percentages of Black and White men, deviating from parity by at most four percentage points. Instead, the Black male labor market has been overshadowed by one fact: in every single industry, from 1950 through 2000, Black men have earned less than White men. As the above analysis shows, the income inequality has improved over time (although not by much since 1970). But those improvements were always founded on increases in the wage earned by Black men, and never by changes in industry segregation.

Black Women

A cross section of the early labor market for women reveals much more segregation than was found for men. In 1950, over half of all Black women were employed in the Personal Services industry. Further, only 10 percent of White women were employed in this field, making it the most segregated industry for men or women. The Personal Services sector also paid the lowest wage among the top five industries, with an average wage for Black women just over $1,000. While it is true that White women actually earned slightly less than Black women in this sector, because this industry was the lowest paying and had the highest proportion of Black women employed, this slight wage differential within the field did not significantly affect wages for all employed Black women, who earned 38 percent less than White women in 1950.

Personal Services continued to be a highly segregated industry for Black women, becoming even more so in 1960, (with the share Black employment waning until 1990 when it ceased to be a major employer); however, it was not the only industry that followed this trend. Retail Trade was another important industry for women, employing twice as many White women than Black women in both 1950 (22 percent to 10 percent) and 1960 (19 percent to 9 percent). Similarly, Nondurable Goods Manufacturing also employed over twice as many White women as Black women over the same time period, while Durable Goods Manufacturing employed three times as many White women as Black. Unlike Personal Services, both of these industries had negative wage differentials for Black women, ranging from Black women earning 84 percent of the White women in Retail Trade to 78 percent in Durable Goods Manufacturing. Overall, Black women in the 1950s and 1960s found themselves in overwhelmingly segregated industries that paid them lower wages. Although by 1960 the wage differentials were not as large as in the decade before, the pronounced effect of low wage levels in the Personal Service sector left Black women earning 45 percent of White women's wages.

The experience of Black female workers changed quickly by 1970. First, the share of Black women employed in Personal Service fell from 45 percent to 22 percent. Second, segregation reduced and wage discrepancies lessened in the other major industries. Employment shares rose in both sectors of Manufacturing, climbing to 6 percent in Durable Goods (versus 9 percent for White women), and 8 percent in Nondurable Goods (versus 10 percent for White women). Further, while Retail Trade still employed twice as many White women as Black women, the wage differential reversed, with the median Black women earning $10,669 compared to the median White women's wage of $9,761. These developments helped improve Black women's position in the labor market, with the positive employment shifts in Manufacturing and increase in wages in Retail Trade decreasing income inequality drastically, resulting in Black women's wages rising to 75 percent of White women. However, the most important development in the labor market was the ascent of the Professional and Related Services sector.

In 1950, few women were employed in the Professional and Related Services sector. The least segregated industry, the sector's influence on income inequality was overshadowed by the size and scope of Personal Services, as well as the segregation in Retail Trade and Manufacturing. However, in 1960, its significance in the labor market for Black women increased, with lower levels of segregation and a reduced wage differential. By 1970, the Professional and Related Services Industry employed more Black and White women than any other. Most importantly, the industry achieved two important milestones. Besides becoming the largest employing industry for all women, the wage

Figure 5: Women

		1950		1960		1970		1980		1990		2000	
		Emp	Inc	Emp	Inc	Emp	Inc	Emp	Inc	Emp	Inc	Emp	Inc
Agriculture, Forestry, and Fishing	Black	12%	$1,191										
	White	3%	$889										
Finance, Insurance, and Real Estate	Black					3%	$17,025	6%	$18,524	7%	$22,848	7%	$25,000
	White					7%	$18,841	9%	$18,524	9%	$21,504	8%	$25,000
Manufacturing-Durable Goods	Black	3%	$9,450	3%	$14,599	6%	$17,479	8%	$20,328	6%	$21,108	5%	$21,000
	White	10%	$13,650	9%	$18,606	9%	$21,111	8%	$21,555	7%	$22,848	6%	$24,000
Manufacturing-Nondurable Goods	Black	7%	$8,750	6%	$11,736	8%	$13,847	9%	$15,897	8%	$16,128	5%	$18,600
	White	18%	$10,850	14%	$14,026	10%	$17,025	8%	$17,367	6%	$18,816	5%	$22,000
Personal Services	Black	51%	$3,850	45%	$3,721	22%	$5,221	10%	$6,838				
	White	10%	$3,850	8%	$3,149	6%	$5,675	4%	$6,537				
Professional and Related Services	Black	11%	$8,050	18%	$11,736	28%	$16,571	37%	$18,061	37%	$18,816	41%	$20,000
	White	16%	$10,850	23%	$14,026	28%	$17,479	32%	$17,367	35%	$19,488	40%	$21,900
Public Administration	Black			3%	$19,751			8%	$22,874	8%	$25,536	8%	$28,000
	White			4%	$19,751			5%	$22,874	4%	$24,872	5%	$28,000
Retail Trade	Black	10%	$4,550	9%	$6,011	9%	$10,669	11%	$10,887	13%	$10,163	14%	$11,100
	White	22%	$6,650	19%	$7,156	18%	$9,761	19%	$10,008	18%	$10,483	18%	$12,000

*All numbers are medians except Agriculture, Forestry, and Fishing, which are averages.
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differential had shrunk to less than $1,000, with Black women earning $16,571 and White women earning $17,479.

From 1980 through 2000, Professional and Related Service continued to be the major factor in reducing income inequality between Black and White women. Professional Services ceased to be a major employer of women, and the Manufacturing sector fell to about 10 percent of the female workforce. Retail Trade remains an important industry, with employment segregation further reduced. However, its impact on income inequality is small compared with the influence of Professional Services. Every year, Professional Services increased its importance in the labor market, and by 2000, employed 40 percent of both Black and White women. In addition, Black women earned over 90 percent of White women's wages. Other industries also experienced a similar trend of near equality in wages and employment percentages. Finance, Insurance, and Real Estate employed a little under 10 percent for all women, paying equal wages to Blacks and Whites alike. Public Administration, while employing more Black women than White (8 percent of the Black population compared to 5 percent of the White population), also paid equal wages by 2000.

In summary, Black women made significantly more gains in their employment status than Black men, reducing income inequality from Black women earning 38 percent of the wages of White women in 1950 to actually achieving equality in pay from 1980 through 1990 (and near equality of 96 percent by 2000). In 1950, the majority of Black women found themselves employed in the highly segregated industry of Personal Services earning the lowest wages amongst all major industries. From there, they made important strides in leaving both segregated industries and industries with large wage differentials and entering industries that employed almost equal shares of both Black and White women that paid almost identical wages. This intersection of increased parity in employment percentages and wages earned across the major industries led the reduction – and near elimination – of income inequality.[10]

Conclusion

Using segregation and income disparities within industries as a tool to explore the dynamics of income inequality, the analysis of Black and White income inequality revealed different experiences for men and women. Both Black men and women held similar positions in the labor market in 1950, employed overwhelmingly in highly segregated, low paying industries. By 2000, segregation has reduced greatly for both men and women; however, while wage disparities had also shrunk between Black and White women, they persist for men. The disparate experience of Black men and women underscore the comprehensive nature of income inequality, and show that in order to eliminate income inequality, policy makers cannot merely focus on wage differentials or segregation in industries, but must consider the two in tandem.

Notes

1 In this paper, industry segregation will refer to the differing shares of employment that demographic groups occupy in a given industry. The term is not meant to reflect a policy of intentional discrimination, for segregation may result from random allocations of workers. For more information, see Carrington and Troske (1997).

2 For a review on the economics of discrimination, see Arrow (1998).

3 The data was downloaded from http://usa.ipums.org/usa/index.shtml.

4 Brown (1984) provides a critique for focusing only on employed workers, stating that apparent wage gains are inflated by potentially lower earning workers dropping out of the work force. This critique is muted in this context for the focus in on wages earned in industries and not on income earned in general.

5 Explained at http://usa.ipums.org/usa-action/codes.do?mnemonic=IND1950.

6 Note that these five industries did not remain constant over time.

7 Heckman, Lyons, and Todd (2000) describe in detail common methodological errors researchers make when studying Black-White income inequality, and the methodology employed in this study is subject to some of these errors. Hence, readers should not interpret these results as being the most accurate estimation of income inequality, but rather as a general illustration of labor market conditions.

8 When referring to the wage inequality between demographic groups as a whole, the statistic used is the ratio of the median wage earned in both groups.

9 As indicated, the analysis is restricted to the top five industries that employ that largest percentage of Black and White workers.

10 Derek Neal (2004) takes into account voluntary withdrawal from the labor market and finds that income gaps between Black and White women are actually larger than observed in Current Populations Surveys. However, this analysis is concerned only with observed wages.

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