

*Who Have Inclusionary Policies in Higher Education Really Helped?:
Looking at College Accessibility and the College-Wage Premium, 1962-2007*

By
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Introduction

Education has traditionally functioned as an economic signal, indicating an individual's ability to perform adequately within the labor market and thus, in turn, the extent to which that individual is worthy of a stable income and how much that income should be. The United States' long history of marginalizing certain groups of people, however, has undoubtedly created exclusionary systems, with education being no exception. Recent policies, however, have focused on improving the accessibility of higher education to traditionally marginalized groups since the early 1960s. Critics of more inclusionary practices in higher education, however, purport that a culture of "overeducation", or the increased attainment of unnecessary academic training, has resulted in a number of unintended and negative consequences. Overeducation is problematic when the supply of college-educated workers exceeds the demand of college-educated workforce. The presence of this trend has been attributed with, among other things, diminishing the value of education within the labor market. Thus, it is argued that policies seeking to advance individuals through institutions of higher education have contributed to the diluted value of an advanced degree and have weakened the signaling power of education.

Using the implementation of affirmative action in 1965 as a reference for the trend of introducing proactive inclusionary policies in higher education¹, this paper

¹Prior to its revision by President Johnson in 1965, affirmative action policy did not require proactive steps be taken to include marginalized populations.

explores whether or not such policies have successfully increased accessibility of higher education, and, if so, seeks to respond to critics who claim such practices have been more harmful than beneficial to date. The first section of this paper assesses whether higher education has in fact become more accessible to traditionally marginalized groups, specifically minorities, since the onset of affirmative action by asking: (1) Have inclusionary policies, such as affirmative action, increased accessibility to college for minorities since 1962? and (2) How, if at all, has college participation changed across racial groups and in the population as a whole between 1962 and 2007? The second part of this paper seeks to understand how the value of a college education has been influenced by inclusionary policies. In this section, the nature of and change in college wage premiums are explored by examining full-time workers pre- and post- affirmative action, in 1962 and 2007, with the aim of understanding whether the value of a college degree has changed in terms of earning potential. Namely, (1) Do college graduates have a higher earning potential than those with a lesser education? (2) And, if so, how has the college wage premium changed, if at all, since affirmative action?

Literature Review

How it Was

Jeffersonian ideas of meritocracy have long pervaded the supply and demand of higher education (Nemec, 2006). Thomas Jefferson believed in a highly educated aristocracy naturally selected through the use of elective participation in higher educational pursuits. Because the highly educated had a responsibility to contribute to the nation's welfare, Jefferson insisted permission to participate in higher education should be determined by talent. College entrance exams began to dictate the college

admission process, creating a divide among the populace according to ability (Labaree, 1997). At the time, lower levels of education were made available to the masses through the earliest forms of public education. High school was considered the precursor to college, a good that was reserved exclusively for the “best and the brightest” (Nemec, 2006).

At the time of Jefferson’s writing, the absence of funding from Britain meant that the price of higher education—borne by the individual’s family—made higher education unavailable for most people, and hence, assured a fruitful investment (Nemec 2006). The high price, coupled with merit-based admissions, resulted in a scarcity of college degrees and characterized higher education as a private good providing social mobility. Its possession was not necessary for employment, but did instead provide desirable advantages to those who were willing and able to pay for a degree. The possession of a college degree increased the individual’s perceived social value by clearly signaling prestige and status, ensuring a market of employers eager to buy college-educated workers (Labaree, 1997).

The New Faces of Higher Education

A number of more recent policies initiated in the 1960s, however, have essentially re-characterized higher education (Cunningham, 2006). In certain industries, an increased desire for professionalization and prestige demanded formally educated workers.

“Occupational groups that have held the status of ‘marginal professions’ are intensifying their efforts to be acknowledged as full-fledged professions” (Hall, 1992). Job markets once available to the masses are now becoming exclusionary in an effort to maintain autonomous control of the profession (Hall, 1962). Many jobs necessitate a sufficient

demonstration of general knowledge—attained through some higher education—in order to be considered capable of additional specialized training, usually available through professional school. This increased focus on educational and entrance requirements has essentially made a collage education the precursor to graduate school, transforming higher education into a necessity.

Government policies have followed suit. Recognizing increased demand, federal policies work to increase higher education accessibility. Most notable among these policies, perhaps, is affirmative action. Affirmative action is the legal requirement that schools, among other organizations, take deliberate steps to include historically marginalized or excluded groups of people, which traditionally has meant preferential admission practices for racial minorities and women, but may in some instances extend to the economically disadvantaged (Holzer and Neumark, 2000). President John F. Kennedy introduced this overarching policy by executive order in 1961 (E.P. 10925) insisting that institutions accepting federal funding hired employees free of racial bias. The policy was later revised by President Lynden B. Johnson, when in 1965 he declared, once again through executive order (E.P. 11246), in order to “correct the effects of past and present discrimination” the “protected class, underutilized applicants” were to be accepted into federally funded institutions whenever possible (E.P. 11246). The United States Supreme Court upheld the consideration of race, among other factors, in college admissions in 2003 with the *Grutter v. Bollinger* decision (Massey and Mooney, 2007). “Special aid and enrollment-driven appropriations have induced many institutions to recruit minority students” and contributed to an upsurge in college admissions (Orlans, 145). It has been widely understood that admissions would likely decrease in the absence

of such preferential admission carrots (Orlans, 1992). Espenshade and Chung (2005) used micro stimulations to show that in the absence of affirmative action, the number of African American and Hispanic students admitted would be reduced by up to two-thirds of the current rate.

Educational institutions' preferential policies have also changed the basis for college admission, increasing accessibility. Since the 1920s, for example, Ivy League schools have favored "legacies", or applicants whose relatives held alumni status, in an effort both to increase endowment and to keep socially disfavored groups, such as Catholics and Jews, from enrolling (Megalli, 1995; Veysey, 1980). This practice is no longer limited to the Ivy League, with at least 600 schools currently asking applicants to identify any legacy ties on the application form, although today the reasons are more directly geared at establishing and maintaining alumni relations (Megalli, 1995). Furthermore, universities often willingly compromise admission standards to attract and enroll the best student athletes. This practice that has been shown to increase the applicant pool overall and simultaneously increase enrollment (Purdy et al, 1982). In fact, this trend of inclusion has changed in elite universities such that these universities favor recruited athletes more than their underrepresented minority peers (Espenshade et al., 2004). Supreme Court Justice Harold Blackmun summarized the increasingly lax admission standards of American institutions of higher learning, stating "institutions of higher learning... have conceded preferences up to a point to those possessed of athletic skills, to the children of alumni, to the affluent who may bestow their largess on the institutions and to those having connections with celebrities, the famous, and the powerful" (Blackmun, 1987).

Inarguably, higher education is considered an appropriate option for a much larger group of people today than at the founding of this country. It is no longer reserved for only the best and the brightest, as the Jeffersonian meritocracy dictated. The merits and talents needed for participation are now more widely understood as abilities held by many. Additional education, as opposed to occupational training, became—and remains—a practical and acceptable way to increase vocational competence (Wolfle, 1970). The first section of this paper assesses whether higher education has in fact become more accessible to traditionally marginalized groups, especially minorities, since the onset of affirmative action.

A College Wage Premium?

It is generally accepted that higher education leads to increased understanding and subsequent ability to perform within the area of particular knowledge attainment. Sociologists and economists alike, therefore, insist there should be a positive relationship between education and earnings, arguing that “educated workers earn more than their less educated counterparts because they are more productive” (Verdugo and Verdugo, 1989). It is “suggested that a primary role of education is to serve as a screening, certification or licensing device” (Taubman and Wales, 2). Because firms must pay to train their workers, and since the more highly educated are traditionally thought to be the most capable of heightened performance (reticent of ideas promoted by meritocracy) firms often base hiring decisions on applicant’s education as an inexpensive way to minimize costs of production (Taubman and Wales, 1974).

As a result, Americans, increasingly persuaded that employment opportunity is increased by university participation and presented with increased accessibility as a result

of the aforementioned policies, have heightened their demand for higher education. Since the 1960s, when the focus on professionalization began to increase and affirmative action policies were first introduced, college attainment has grown by nearly 95 percent (NCES, 2008). Although it is impossible to parse out the exact effects on increased demand (because there is no formal indicator which allows complete isolation of one policy's effect on admission (Holzer and Neumark, 2000)), the increase in enrollment that has occurred since policy implementation is striking. While the supply of college-educated workers has undoubtedly increased, many argue demand has not (Arcidiacono, 2005; Sicherman, 1991; Smith, 1986). The result is a phenomenon termed overeducation.

Overeducation occurs when the educational achievements of a worker exceed the skill required by the occupational positions available (Burris, 1983). In essence, the college degree has replaced the high school diploma as a pre-requisite to on-the-job or subsequent professional training. “[A] considerable number of college graduates work at jobs that in earlier years were almost always filled by nongraduates...” (Wolfe, 319) as a result of more industries’ use of college degrees to distinguish potentially productive employees. Although inexpensive for the firm, the cost of the degree must be borne by someone. Unfortunately, unlike a high school degree, a college education is not fully subsidized by government entities. The overwhelming result of inclusionary practices in higher education has placed an unnecessary financial burden on individuals in order to acquire a job where performance is not necessarily dependent on educational attainment, but a college education is nevertheless expected.

While many professions insist on the essentiality of higher education, its necessity is not always convincing, especially when higher educational status does not directly

contribute to occupational competence (Wolfe, 1970). The result is an increasing inability to directly link education with financial outcomes; "... additional schooling does not always raise productivity and therefore will not always be rewarded by higher earnings" (Rumberger, 46). Studies on the effect of overeducation on worker outcome have been plentiful. Sicherman (1991) found that college-educated workers earned lower wages than those earned by their peers who held jobs that actually necessitated higher levels of schooling. Furthermore, workers who were employed in sectors that demand higher levels of education than they personally hold received higher wages than similarly educated employees who worked in jobs requiring the exact amount of schooling they have obtained (Sicherman, 1991). At least one study indicates that an increased supply in prospective employees with a college education may have led to a decline in relative earnings, since employer demand for college-educated workers has not increased (Freeman, 1980). Another study found "that changes in the relative supply of college workers had a substantial and significant negative impact on the college wage premium..." (Goldin and Katz, 9). Others have questioned the presumed link between higher education, productivity, and higher earnings, finding that education does not always entail greater rewards (Veredgo and Verdego, 1989). Rumberger (1979) further concluded that as more educated workers replace less educated workers, the social rate of return (in terms of productivity) may decrease despite increases in personal rates of return (in terms of income). In short, it has been proposed that overeducation has minimized, if not abolished, the link between higher education and substantial earnings.

If these studies on overeducation are viewed at face value, one would likely conclude that a college degree is no longer necessarily commensurate with the highest

incomes. Instead, literature points out, a college degree has become increasingly associated with an individual's probability of securing average pay; "[t]hose who do not earn a college degree are likely to be in the lower half [of the income distribution]" (Mumper, 99). Mumper (2003) showed how the price of securing a college degree has especially effected students in the lowest income bracket, where, on average, public college tuition cost families 37 percent of their yearly income in 2001, compared to 15 percent in 1980 (Mumper, 2003). Thus, though policies suggest that education's role as a private good available for purchase is no longer appropriate, as it has turned into a public good designed to prepare people for participation in the labor market. The social efficiency approach to schooling now dominates the understanding of the functionality of higher education, as the health of the economy is dependent on society's ability to train its citizens to properly fill economic roles (Labaree, 1997). The third part of this paper will explore whether or not increased accessibility and participation has changed the value of a college degree, by assessing a college degree's effect on income before and after policy implementation.

Empirical Analysis

Analytic Approach #1

This study used college participation rates and college participation gap data to determine whether college has been more accessible for minority groups since the onset of affirmative action in higher education.

College participation rates were calculated by dividing the total number of individuals who indicated having completed at least one year of college at the time of

survey completion² divided by the number of college eligible, college-age individuals³ in that same year. Rates were calculated for each racial group and for the total sample in each of the 10 years considered by this study.

College participation gaps were calculated in three steps for each of the 10 years considered by this study. The first step considered the number college-age blacks or non-white, non-blacks who indicated on having completed at least one year of college at the time of the survey completion divided by the number of college-aged whites who had indicated having had at least one year of college. The second step divided total number of college-eligible, college-age blacks or non-white, non-blacks by the total number of whites meeting the same criteria. In the final step, the ratio between these calculations were plotted to determine participation gaps between whites and blacks and whites and non-white, non-blacks throughout time. In this step, two graphs were created, one for black/white gaps and another for non-white, non-black/white gaps, with participation ratios plotted on the y-axis and eligibility ratios plotted on the x-axis in each year considered.

The general location of these points was important in determining which group had an advantage in terms of college eligibility and participation in each particular year as well as whether that advantage was increasing or decreasing over time. The relative quadrant of the graph was important for the interpretation of gaps presented. Using $(x=1,y=1)$ as the origin. Points lying in the lower, left quadrant indicate that, in absolute numbers, there were more whites who were both eligible for college and who participated

² Vocational/technical school students and associate degree students were excluded from analysis.

³ High school completion at the time of survey completion was used as a proxy for college eligibility.

in college in that given year. As points move to the right of $x=0$ there is an increase in college eligibility among the minority group until $x=1$, when more minorities are eligible for college than whites. As points move above $y=0$ there is an increase in college participation among the minority group until $y=1$, when more minorities participate in college than whites. Thus, if whites held complete advantage in both college eligibility and college participation, that is, whites made up the entire population of college eligible persons and college participants, points would appear at the graphs origin ($x=0, y=0$). As participation gap points move away from the origin, the proportion of whites in each category diminishes until the number of college eligible persons and college participants are the same for each race at ($x=1, y=1$).

Plotting participation gap ratios also compares the rate at which a racial group's college eligible population was participating in college during a given year, and how this rate changed over time. For example, if a participation gap value lies to the south west of ($x=1, y=1$), whites would hold the absolute advantage in number for that year. If whites and the minority group under consideration participated in college at equal rates given the number of eligible candidates, participation gap values would lie along the 45 degree line starting at the origin ($x=0, y=0$) and going through the point ($x=1, y=1$). When values lie above this line, a higher proportion of college eligible minorities are participating in college as compared the proportion of college eligible whites. Likewise, the farther below the 45-degree reference line a point southwest of ($x=1, y=1$) lies, the greater the rate of college participation for whites as compared to their peers in that year.

To determine how, or if, white advantage in college participation has changed over time the slopes and positions of the line of best fit for and the 45-degree reference line

which represented the expected ratio of minority to white participation versus the expected ratio of minority to white college eligibility are compared. Contrasting these two lines provides insight as to whether the gap between participation rates had widened or narrowed since the onset of affirmative action. Lines of best fit whose slopes are greater than 1 indicate a disadvantage among the minority group in terms of a change in rate of college participation as compared to whites over time. Furthermore, lines of best fit with slopes greater than 1 which cross the 45-degree reference line over the time period observed indicate the rate at which minorities participate in college exceeded the rate at which whites participated between the years of 1962 and 2007.

Analytic Approach #2

To explore how white-minority wage gaps have changed since affirmative action, I employed multiple liner regression, with pre-tax wage and salary earnings as my dependent variable full-time male workers in 1962 and 2000. For each year I conducted a series of four regression models, which were constructed in a hierarchical framework with variables entered in four steps. Each subsequent step included all variables in the previous step. The first step in each covariance model, which includes college education alone, identified the unadjusted relationship wage gap between college educated and non-college educated respondents. In the second step, I introduced race. In the third and fourth labor and demographic characteristics were entered as control variables.

Data

This study uses data from the Integrated Public Use Microdata Series from the Current Population Survey (IPUMS-CPS), organized and distributed by the Minnesota Population Center. The dataset collected by IPUMS-CPS, funded by the National

Institute of Child Health and Human Development through 2012, integrates data recorded from the March CPS conducted by the U.S. Census Bureau and the Bureau of Labor Statistics during the years of 1962 to 2007. The March CPS, formally known as the March Annual Demographic File and Income Supplement includes a number of supplemental questions intended to record the demographic and labor characteristics of participants. The March CPS employed a multi-stage stratified design to randomly select a national representative group of U.S. households or dwelling (excluding military personnel living on base) from the total U.S. population⁴. Utilizing a rotating panel design, selected households were interviewed 8 times over a 16 month period, with households undergoing interviews every month in the first 4 months, being excluded from the sample in the next 8 month and undergoing final monthly interviews over the last 4 months. Data were collected primarily through the use of telephone interviews, except in the first and fifth months where interviews were conducted during personal visits.

Data from the March CPS from 1962 to 2009 have been uniformly integrated by IPUMS-CPS in order to make cross-time comparisons. The census microdata included is composed from a sample of individual records with the individual as the unit of analysis. For the purposes of this paper, two distinct samples were drawn from the IPUMS-CPS dataset for each analytic approach described above.

Approach #1: Variables used

In order to explore changes in college participation in the wake of affirmative action in higher education, I utilized waves of data collected between 1962 and ending in

⁴ Starting in 1976, the survey began oversampling Hispanics to ensure more reliable estimates.

2007. As with any trend analysis, it is important to consider trends that may have already been in progress prior to a policy's implementation. Exploration of years prior to affirmative action are necessary to determine how college-eligibility and college enrollments differed among races prior to affirmative action, and whether there were any changes in participation by race prior to the introduction of formal policies. The addition of subsequent years allows an analysis of how participation changed in the wake of the policy's implantation. The absence of a shift may indicate that any changes in participation were already in place prior to affirmative action, diminishing any support of causality between policy implementation and participation gap changes.

Unfortunately, IPUM-CPS data is only available from 1962 onward, leaving minimal room for an effective exploration of shifts in participation trends pre- and post-policy introduction. Furthermore, education variables are unavailable for 1963. This study, therefore utilizes college participation gaps from 1962 to increase minority participation as a benchmark from which to assess participation trends post-affirmative action starting in 1967⁵, using waves of data in five-year increments from 1962 to 2007⁶.

To be considered for analysis individuals had to be a college-aged civilian, between the ages of 17 and 24. I created two dummy variables for analysis; the first indicated whether an individual was college eligible, that is whether he confirmed having a high

⁵ 1962 was considered pre-affirmative action despite affirmative action policy first being introduced in 1961 since the policy did not require proactive steps be taken to include marginalized populations until its revision in 1965.

⁶ Although not included in the final presentation of enrollment gap ration as to not skew the calculations towards earlier years, enrollment gap ratio values were also calculated for 1964 and 1965 and can be found in the chat A-1, found in the appendix at the end of this paper.

school diploma or its equivalent at the time of survey completion (yes =1, no =0)⁷ and the second indicated whether the individual had participated or was participating in college at the time of the survey (yes=1, no=0)⁸. Finally, I created a categorical variable to account for the respondent's race, coded as white, black or other. The final subset included 72,097,356 cases for analysis.

Approach #2: Variables Used

For the second empirical analysis utilized in this paper, two subsamples were drawn from IPUMS-CPS data for the years 1962 and 2007. These years were chosen both to capture the earliest years available in IPUMS-CPS data, as well as to minimize systemic, economic differences, e.g. inflation and unemployment rates, between the base years used in Analytic Approach #2. Selection criteria included civilian males, 25 and older, in the labor force that worked at least 40 hours in the previous week for a wage or salary from a public or private employer. Furthermore, respondents could have no higher than a college degree at the time of survey selection. This selection criterion attempted to mediate the inflation in the calculation of college wage premiums that might if individuals with higher levels of educational or vocational training were included.

The primary outcome was a continuous measure of pre-tax wage and salary. For my analytic analysis I centered and z-scored this measure ($M = 0$, $SD = 1$) so that I could have a more normally distributed predictor and be able to discuss the effects of my

⁷ Individuals who responded having completed grade 12 but unsure of or not receiving a diploma did not meet college eligibility criteria, and were excluded from analysis.

⁸ Individuals were considered college participants if they recorded having had at least 1 year of college or more, a bachelor's degree, or any post college degree which presumably required the completion of college (e.g., a master's degree, a professional degree or a doctorate). Individuals recording participation in an associate's degree program or marking an associate's degree as the highest degree earned were excluded from analysis.

predictors in effect size (ES) units, permitting a substantive interpretation of results beyond their statistical significance. To make the analysis comparable between years, pre-tax wages and salary in 1962 was transformed in 2007 dollars, multiplying wages by the ratio of Consumer Price Indexes in each year, or $CPI_{2007}/CPI_{1962} = 207.342 / 30.2 = 6.865629^9$. Also, because a wage cap of 50,000 dollars was placed on respondents in 1962, equivalent to 343,281.45 dollars in 2007, I placed a wage cap on pre-tax wage and salary in 2007, replacing any case exceeding the 1962 wage cap with the equivalent wage cap value in 2007 dollars, that is \$343,281.45

The variable of interest employed by this study was a dummy variable indicating whether or not the individual held a college degree (yes = 1; no = 0). The second main effect considered by this study was race, which was measured by a series of dummy variables that captured whether the respondent was black or non-white, non-black (other), with whites as the uncoded comparison category.

Using the industry codes provided by IPUMS-CPS I narrowed the list into a more manageable set of industries and created a series of dummy variables, mining and agriculture, manufacturing, sales and service, with government as the uncoded comparison group, to account for the respondent's labor characteristics. Additional variables were created to account for demographic differences among respondents, including a continuous measure of age in tens of years, a series of dummy variables related to marital status (married, separated, divorced or widowed with single as the uncoded comparison category), and a series of dummy variables indicating the residential area a respondent lived in, that is, a city, suburb or rural area.

⁹ CPI values obtained from the U.S. Bureau of Labor Statistics Division of Consumer Prices and Price Indexes: <http://www.bls.gov/cpi/>.

Weights

Because the March CPS followed a multistage, stratified sampling design, the data include a series of design weights. As with other longitudinal studies, analyses using IPUMS-CPS require the use of weights to compensate for (1) unequal probabilities of selection (e.g., the intentional oversampling of Hispanics), (2) nonresponse effects, and (3) unknown distribution of demographic characteristics for the entire population. I weighted all of the analyses using the individual-level weight PERWT which allowed results to be generalized to the U.S. population during the study's years of interest between 1962 and 2007.

RESULTS

Approach #1: Descriptive Results

An examination of college eligibility and college participation by race for college-aged, civilian males between the years of 1962 to 2007 (Table 1 in the appendix), reveals, among other things, that the total number of college eligible respondents and the total number of college participants have increased over time for both blacks and non-white, non-blacks. This is useful in the interpretation of empirical results, since we can be sure that any movement along the x- or y-axis is at least partially attributable to result of increased eligibility or participation by the minority group being considered. It should be noted, however, that absolute white college eligibility and participation fell between 1982 and 1987 and again between 1992 and 1997. This should be taken into consideration when interpreting participation gap ratios, since movements along the x- and y-axis during these years do not only indicate gains made by the minority group in consideration, but also losses made by whites during those years.

An examination of participation rates for each racial group, found in Table 1 of the Appendix, reveals that although college participation by whites remained relatively stable, between 71.0% in 1962 and 77.4% in 1987, making them the group with the highest rate of college participation during these years. In subsequent years, however, whites encountered a decrease in the rate of college participation, ending with a participation rate of only 56.3% in 2007. As a result of this decline, college-eligible whites were surpassed by non-white, non-blacks in 1992, when 74.6% non-white, non-black college eligible respondents participated in college as compared to 56.8% of college-eligible whites. Non-white, non-black, college-eligible respondents continued to have the highest rate of participation between 1992 and 2007, ending with a observed participation rate of 66.1%.

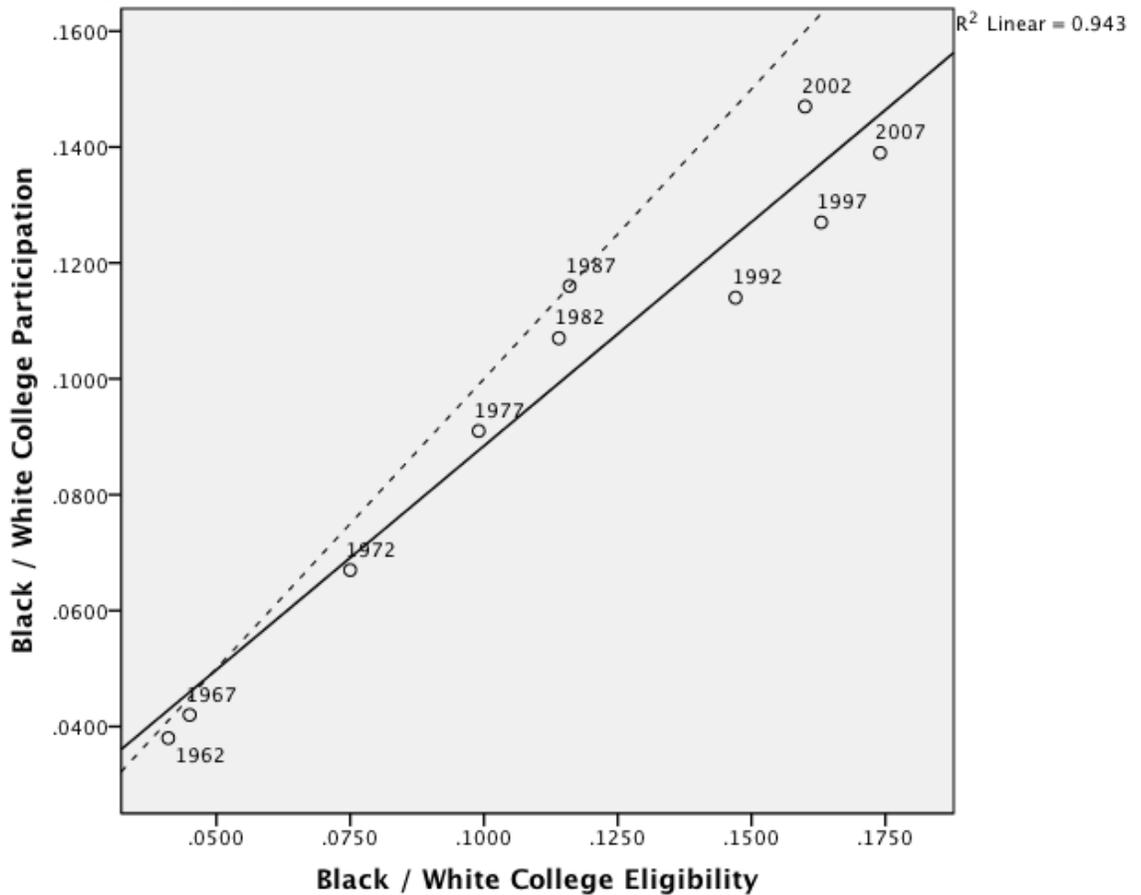
It should also be noted that black males between the ages of 17 and 24 have participated in college at the lowest rates as compared to whites and non-white, non-blacks, with the exception of 1964 where they have the highest rate overall¹⁰. Excluding 1964 from analysis, blacks saw an increase in college participation rates from 1962, where they began with a rate of 65.7% until 1992, when participation fell to 43.9% (the lowest rate observed over the time period). Although blacks have slightly increased participation to 50.2% in 2002, the group suffered another drop, ending with a rate of 44.9% in 2007.

Approach #2: Analytic Results

¹⁰ In 1964, 88.4% of college-eligible, black, males between the ages of 17 and 24 participated in college. The high value of this calculation is extremely large, and likely an indication of misrepresented data or other type of error. Although presented, caution should be taken during interpretation of this year, and perhaps dropped in subsequent analysis.

Figure 1 presents participation gap and eligibility gap data during the years from 1962 to 2007 in five year increments for black males between the ages of 17 - 24 with whites as the comparison group. The plotted points lie southwest of $(x=1, y=1)$ suggesting that whites held absolute advantage over the entire time period, that is, a greater proportion of whites made up the population of college eligible individuals as well as the population of college participants. It should be noted, however, that as time progresses, the movement of points both vertically and to the right, suggest an increase in absolute eligibility and participation for both groups, confirming, as literature suggests, that more inclusionary policies in higher education resulted in an influx of new college students.

Figure 1. Participation Gap Ratios For Blacks and Whites

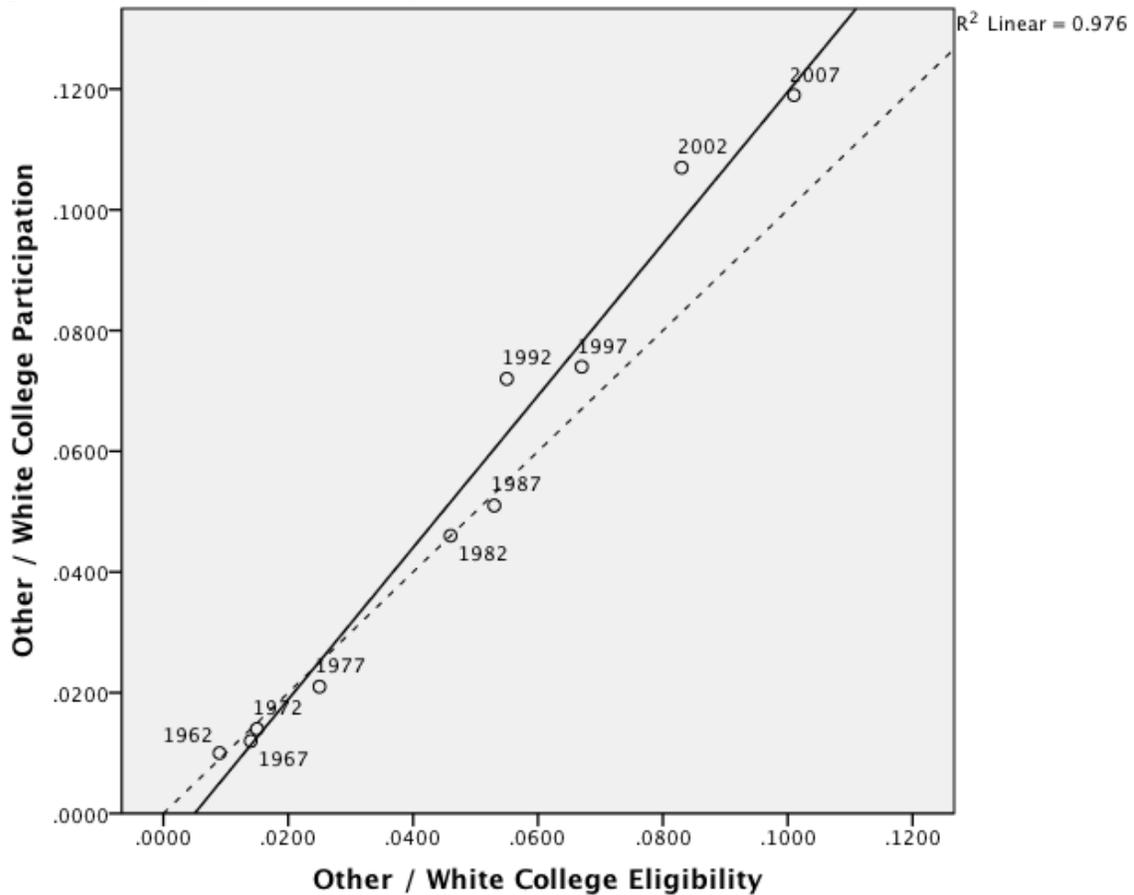


The dotted line represents the expected ratio of black to white participation versus the expected ratio of black to white college eligibility if blacks and whites enrolled in college and completed high school at equivalent rates (that is, $y = x$). Because these points lie below the 45 degree line between $(x=0, y=0)$ and $(x=1, y=1)$, with the exception of 1987, we can conclude, on average, blacks still participated in college at lesser rates than their white peers, as was confirmed by an exploration of participation rates discussed in the previous section.

The line of best fit's (the solid black line) positive slope indicates that both the proportion of blacks participating in college and the proportion of college eligible individuals, or high school graduates, rose between the years of 1962 and 2007; the proportion of total college participation by blacks, as compared to whites, rose from an initial value of 0.037 in 1962 to 0.139 in 2007, while the proportion of total eligibility, as compared to whites increased from 0.041 in 1962 to 0.174 in 2007. The line's slope, which is less than 1, however, suggests that, on average, the gap in the proportion of college eligible blacks participating in college and the proportion of college eligible whites participating in college widened over time. It is interesting to note that in the years immediately preceding and proceeding the implementation of affirmative action (1962 and 1967, respectively), blacks seemed to be participating in college at rates much closer to their white peers. A calculation of participation gaps in the years of 1964, 0.9%, and 1965, 0.6%, reveals that differences in the rates of participation between blacks and whites seemed to deviate, at the detriment of blacks, only after the implementation of affirmative action.

Figure 2 presents participation gap and eligibility gap data during the years from 1962 to 2007 in five year increments for non-white, non-black males between the ages of 17 -24, with whites as the comparison group. The plotted points lie southwest of $(x=1, y=1)$ again suggesting that whites held absolute advantage over the entire time period, that is, a greater proportion of whites made up the population of college eligible individuals as well as the population of college participants. Given the increase in overall population of college eligible non-white, non-blacks, the vertical movement of the participation gap values over time suggests that non-white, non-blacks have increased the number of college participants and eligible college candidates over time.

Figure 2. Participation Ratio Gaps for Non-White, Non-Blacks and Whites.



The dotted line represents the expected ratio of non-white, non-black to white participation versus the expected ratio of black to white college eligibility if blacks and whites enrolled in college and completed high school at equivalent rates (that is, $y = x$). Over time, participation gap values have for the most part remained above or on this 45-degree line, suggesting, on average, the advantage in rate of participation has been held by non-white, non-blacks when compared to whites, with the exception of 1967, 1977 and 1987 when whites enrolled at slightly higher rates and in 1982 when the rate of participation between the two groups was about the same (see Table 1). In more recent years, non-white, non-blacks are participating in college at higher rates than their white peers.

The line of best fit through these points (the solid black line) has a positive slope, indicating that both the proportion of non-white, non-blacks participating in college and the proportion of college eligible individuals has increased between 1962 and 2007; the participation ration between non-white non-blacks and whites rose from an initial value of 0.010 in 1962 to 0.119 in 2007, while the eligibility ratio increased from 0.09 in 1962 to 0.101 in 2007. It should be noted, that although non-white, non-blacks participated in college at greater rates than blacks, blacks have the advantage in the proportion participation and eligibility in all years.

Finally, because the slope is greater than 1, suggesting that, on average, college participation gaps between non-white, non-blacks and whites are widening, with non-blacks, non-whites participating at higher rates than whites. This trend, however, has, for the most part, occurred after 1987, with participation gap being small to nonexistent in prior years.

Approach #2: Descriptive Results

Tables 2 and 3 present subgroup means and percentages for full-time, working, civilian males, 25 and older, by race in 1962 and 2007 respectively. My results suggest a relationship between wages and race in both years ($p < .01$). In both samples, on average, whites were the highest earners (\$40,622.70 in 1962 and \$50,798.60 in 2007) followed by non-white, non-blacks (\$32,792.70 in 1967 and \$46,295.10 in 2007), with blacks earning, on average, the least of the three groups (\$23,781.90 in 1962 and \$28,540.60 in 2007). My results also suggest a significant relationship between having a college education and race ($p < .001$). In 1962, only 1.8% of the sample held a college degree, as compared to 24.2% in 2007. It should be noted that 0% of non-white, non-black, or other, respondents participated in college in 1962, with the percentage rising to 35.2% in 2007. This increase in college attainment has transformed non-white, non-blacks from the least educated group to the most educated group, even over whites, during the observed time period.

Of labor and demographic characteristics included in this study, my results suggest significant relationships between race and marital status, place of residency and industry in both years ($p < .001$). In each racial group for each year, the majority of the sample was married, followed by single, never-married. In 1962, whites were, for the most part, evenly distributed among cities (39.4%), suburbs (30.6%) and rural areas (30.0%). The distribution of whites in 2007, however, was more skewed towards the city (53.5%) and suburbs (27.8%) with only 18.7% of whites recording a rural area as their primary place of residency. Blacks who lived mostly in the suburbs in 1962 (60.1%), also moved more heavily into the city by 2007 (46.5%) with only 42.3% remaining in the suburbs. Non-

white, non-blacks remained consistently, evenly distributed between the city and the suburbs (44.8% and 41.2%, respectively in 1962 and 46.0% and 46.2%, respectively in 2007). Although industry type was found to be significantly related to race in both years, one should use caution when interpreting results as three of the six categories had variance inflation indicators >10 . Finally, the average age of the samples did not vary significantly by year, 42.8 in 1962 and 42.3 in 2007, and its relationship with race was significant only in 2007 ($p < .01$).

Tables 4 and 5 also present subgroup means and percentages for full-time, working, civilian males 25 and older in 1962 and 2007, this time by education level. In both years, college education is significantly related to race ($p < .001$), with college graduates earning nearly \$20,000 more than non-college graduates in 1962 and over \$30,000 a year more in 2007. Similarly, a relationship between race and education exists ($p < .001$), with whites making up the majority of non-college graduate workers and college graduate workers in both years. It should be noted, however, that the percentage of minority workers, blacks and non-white, non-black, increased for both non-college degree holders and college graduates in 1962, while the percentage of white workers fell. Specifically, whites made up 91.1% of full-time, wage earning, civilian, male workers in 1962, while they only made up 83.1% of the same group in 2007, suggesting greater diversity within the population of workers as a whole.

My results also suggest significant relationships between education and the other demographic and labor characteristics observed in both years of analysis, including marital status, residency, industry and age ($p < .001$). In both years the majority of the population sampled was married, both by education level and for the entire subset of

males. In 2007, however, we see a shift towards being single at 20.9% as opposed to 8.0% in 1962. In terms of primary residential area, the entire sub-population of workers was split relatively evenly among cities (37.6%), suburbs (33.0%) and rural areas (29.3%) in 1962, with more college degree holders living in cities (44.1%) than non-college degree holders (37.5%). In 2007, there is an increase in total city dwellers (51.7%), suburban residency remains about the same (31.2%) and rural inhabitants drop (17.1%) (a similar trend is seen even after parsing out educational differences). The increase in city dwellers, however, only minimally decreased the educational gap among workers living in the city, 50.4% holding a college degree and 42.4 % did not. Differences in occupational industry by education changed little between 1962 and 2007. In both years the most popular industry is service for both educational levels. The largest change occurred in agriculture and mining with 9.8% of non-college degree holders and 5.1% of college graduates working in the industry in 1962 and, and only 3.1% of non-college degree holders and 0.8% of college graduates in 2007. Finally, although age was significantly related to education in both samples, college graduates are only slightly younger than their non-college graduates in both years.

Analytic Results

Tables 6 and 7 present my major analysis for approach two: multiple regressions on wages in 1962 and 2007. Recall that the measure of wages was centered and standardized, so that independent variables were z-scores, meaning that these regression coefficients were in SD (or effect size [ES]) units. Wages are presented in 2007 dollars, and for this analysis had a cap of \$343,281.45, for both years.

TABLE 6:

Model 1 establishes the unadjusted differences in wages and the attainment of a college degree in 1962 for full-time, civilian workers at least 25 years of age. On average, the completion of a college degree resulted in a 0.84 SD increase in wages earned ($p < .001$). Model 1 explains 1.3% of the variability in wages ($p < .001$).

Model 2 introduces race to the analysis, with the aim of teasing out the complicated relationships among socio-economic variables, e.g. wages, education and race. The adjusted education gap among wages earned only slightly after holding race constant; specifically a college degree results in a 0.799 SD increase in wages ($p < .001$).

Furthermore, this model shows that there is an inverse relationship between race and wages. Being black is associated with a 0.708 SD decrease in wages ($p < .001$), and being non-white, non-black is associated with a 0.318 SD decrease. ($p < .001$). It is important to note that the strong negative relationship between being black and wages earned, on average, almost entirely negates the benefit a black male would receive from holding a college degree in terms of earning potential. Model 2 explains 5.0% of the variability in wages among the subpopulation of males under analysis ($p > .001$).

Labor characteristics are introduced in Model 3 to account for differences in earnings that result from different pay scales¹¹. After accounting for occupational industry and holding race constant, the relationship between a wages and college completion is still strongly positive ($ES = 0.825$; $p < .001$). Furthermore, the relationship between race and earnings only changes slightly, with both being black ($ES = -0.677$; $p < .001$) and being non-white, non-black ($ES = -0.301$; $p < .001$) negatively effecting wages earned on average. Although of secondary importance to this study, Model 3 also

¹¹ Recall that both service and manufacturing had a VIF > 10 and a tolerance < .10, and caution should be taken when interpreting regression coefficients.

reveals a negative relationship between wages earned and occupations in the industries of service (ES=-0.274; $p < .001$), sales (ES= -0.003; $p < .001$), manufacturing (ES=-0.043; $p < .01$), agriculture and mining (ES=-0.294; $p < .001$) and transportation and communication (ES=-0.061; $p < .001$). Model 3 accounts for 6.4% of the variability in the wages earned in 1962 ($p < .001$).

In the final model, additional characteristics are added, including age, marital status and residential area. The relationship between the main effect and the output remains strong, with college-educated workers earning, on average, 0.822 SD more than those without the same degree ($p < .001$). Furthermore, minority status is still negatively associated with wages, with blacks earning 0.631 SD ($p < .001$) and non-white, non-blacks earning 0.324 SD ($p < .001$) less than whites in 1962. In this model, the relationship between occupational industry and wages remain negative, with the exception of sales which fails to hold any significant relationship with wages earned, when all other variables are held constant. Of demographic characteristics included in this model, age, in tens of years, has a slightly positive relationship with wages (ES = 0.027; $p < .001$), and being of any marital status other than the comparison category of single, gives a worker, on average, a slight advantage in wages earned; being married is associated with an increase in wages of 0.393 SD ($p < .001$), being divorced with an increase of 0.235 SD ($p < .001$) and being widowed with an increase of 0.281 SD ($p < .001$). Finally, as would be expected, individuals residing in cities, on average, earn the most (ES=0.221; $p < .001$) while those living in rural areas earn the least (ES=-0.221; $p < .001$). The final model explains 11.0% of the variability in wages earned among full-time working, civilian males ages 25 and older in 1962 ($p < .001$).

TABLE 7:

Model 1 establishes the unadjusted differences in wages and the attainment of a college degree in 2007 for full-time, civilian workers at least 25 years of age. On average, college graduates earned 0.759 SD more in wages than their less educated peers ($p < .001$). Model 1 explains 10.6% of the variability in wages ($p < .001$).

Model 2 of Table 7 introduces race variables, again in order to parse out complicated relationships among socio-economic characteristics. The adjusted education gap in wages earned only slightly decreased ($ES = 0.757$; $p < .001$). More importantly, perhaps, this model shows that there is an inverse relationship between race and wages. Holding all else constant, blacks, on average, earned 0.251 SD less ($p < .001$) and non-white, non-black earned 0.194 SD ($p < .001$) less than whites. Model 2 explains 11.3% of the variability in wages among the subpopulation of males under analysis ($p > .001$).

In Model 3 labor characteristics are again added to account for differences in earning among occupations¹². After accounting for occupational industry and race, the relationship between a wages and completion of a college degree is still moderately strong and positive ($ES = 0.766$; $p < .001$). It is also interesting to note that after holding all other variables constant, there is a negative relationship between wages earned and occupations in the industries of service ($ES = -0.163$; $p < .001$), sales ($ES = -0.151$; $p < .001$), manufacturing ($ES = -0.100$; $p < .001$), agriculture and mining ($ES = -0.123$; $p < .001$) and transportation and communication ($ES = -0.015$; $p < .001$). Model 3 accounts for 11.6 % of the variability in the wages earned in 2007 ($p < .001$).

Finally, in Model 4, demographic characteristics are considered. The relationship

¹² Recall that both service and manufacturing had a VIF > 10 and a tolerance < .10, and caution should be taken when interpreting regression coefficients.

between wages and college-degree status remains moderately strong, with college-educated workers earning, on average, 0.744 SD more than those without the same degree ($p < .001$). Furthermore, minority status is still negatively associated with wages, with blacks earning 0.205 SD ($p < .001$) and non-white, non-blacks earning 0.163 SD ($p < .001$) less than whites in 2007. Of demographic characteristics included in this model, age, in tens of years, has a slightly positive relationship with wages ($ES = 0.070$; $p < .001$), and being of any marital status other than the comparison category of single, gives a worker, on average, a slight advantage in wages earned. Specifically, being married is associated with an increase in wages of 0.349 SD ($p < .001$), being divorced an increase of 0.176 SD ($p < .001$) and being widowed an increase of 0.008 SD ($p < .001$). Finally, individuals residing in cities, on average, make the most, 0.124 SD above mean wage earnings, holding all else constant, ($p < .001$), while those living in rural areas make the least, 0.132 SD below the mean ($p < .001$). The final model explains 15.6% of the variability in wages earned among full-time working, civilian males ages 25 and older in 1962 ($p < .001$).

Discussion

Approach #1: Have inclusionary policies, such as affirmative action, increased accessibility to college for minorities? How has college participation changed across racial groups and in the population as a whole?

The descriptive and analytical results uncovered from an analysis of college eligibility and participation ratios, college participation rates and college participation gaps calculated provide a number of insights as to how higher education has changed since the 1962, and thus, in the wake of inclusionary policies such as affirmative action.

College participation ratios allow a partial understanding of how racial diversity in higher education has changed since the onset of inclusionary policies. The college participation ratio between blacks and whites was 0.139 in 2007, a noteworthy increase from its initial value of 0.038 in 1962. The increased value of the ratio means that the proportion of blacks, as compared to whites, has increased over time. Similarly, participation ratios between non-white, non-blacks and whites rose to 0.119 (from 0.008, the lowest value in 1965). Thus, since the implementation of affirmative action, both blacks and non-white, non-blacks have in fact become more included in post-secondary institutions. This conclusion, however, does not necessitate that each group has increased the rate at which the group participates in college over time.

Between the years of 1962 to 2007, with the exception of 1964, blacks had the lowest rates of college as compared to whites and non-white, non-blacks. An examination of college participation gap ratios, revealed that, on average, the difference in rates of participation between whites and blacks widened during the years of 1962 to 2007. In other words, even during years when blacks saw an increase in college participation, whites increased their rate of participation as similar or higher rates. Thus, if accessibility is not measured in terms of absolute participation, that is increased representation in the college-education population, but rather in terms of the rate of participation, blacks have fared worse since affirmative action.

Perhaps the most promising finding resulting from this analysis with regard to the social intent to increase accessibility to minority candidates is the continued increase in participation by non-white, non-blacks since affirmative action was introduced in 1965. After 1967, the rate of participation by this group consistently increased, reaching 66.1%

in 2007 (compared to the groups lowest rate of participation in 1965 at only 59.8%).

A scatter plot of these calculations, displayed in Figure 2, also revealed, on average, non-white, non-blacks fared far better in terms of college participation rates, as compared to whites. Beginning in 1965, there was a slight gap in college participation rates, advantaging whites (prior to this year the gap was slight, advantaging either group dependent on the year). Since 1965, however, the group has narrowed its participation gap with whites, and reversed it by 1992. That is, since 1992, non-white, non-blacks have actually participated in college at a rate higher than their white peers (although it should be noted that this was also the case in several years prior to the implementation of affirmative action).

This paper provides support that the proportion of minorities participating in college has increased since the onset of affirmative action, with both blacks and non-white, non-blacks claiming higher proportions of the total population of college participants. An observation of increased diversity, however, should not be the only measure of accessibility considered. After considering the total number of eligible college candidates, the rate at which all college eligible individuals are participating in college has actually dropped since the onset of affirmative action, 70.8% in 1962 and 55.5% in 2007. Furthermore, at least two groups, whites and blacks, are participating in college at lower rates than they were pre-affirmative action (because non-white, non-blacks includes so many racial categories, it is likely that more race/ethnicity groups would have similar trends if parsed out). Decreased rates of participation, therefore, cast doubt on the claim that an influx of students post-inclusionary policies is the cause for overeducation.

Analytic Approach #2: Do college graduates have a higher earning potential than those with a lesser education? And, if so, how has the college wage premium changed, if at all, since affirmative action?

Results from regression analyses performed on pre-tax, wages for full-time, civilian males 25 years or older, confirm the presence of a college wage premium in both 1962 and 2007. The unadjusted college-wage premium in 1962 was, on average, 0.840 SD (\$19,684.73) more than their non-college educated peers ($p < .001$), and 0.744 SD (\$31,124.24) more in 2007 ($p < .001$). It is obvious, therefore, that despite critics' claims that accessibility to higher education and the resulting phenomenon of overeducation have minimized, if not abolished the link between education and increased income (Goldin and Katz 2007; Mumper, 2003; Veredgo and Veredgo, 1999), acquisition of a college degree in both years resulted in higher wages paid. Additionally, not only did college wage premiums exist in both years, they have increased by over a third, since the onset of inclusionary policies. It is also possible, even probable, that wage premiums increased to an even greater degree than is being shown through the analysis presented here, due to the fact that for the purposes of analysis the wage variable was capped at \$343,281.45.

Moreover, the college wage premium has increased to a greater extent for minorities since changes in higher education policy, even after taking labor and demographic characteristics into account. In 1962, before proactive inclusionary policies were set into action¹³, on average, blacks only received a 0.191 SD (\$4,475.93) increase and non-white, non-blacks received a 0.498 SD (\$11,670.23) increase in wages, while a

¹³ Recall, prior to 1965, affirmative action policy did not require proactive steps be taken to include marginalized populations.

college education increased the wages of their white peers by 0.822 SD (\$19,262.91) ($p < .001$). In 2007, however, the wage premium for blacks increased to an increase of 0.539 SD (\$22,102.71) and to 0.581 SD (\$23,824.48) for non-black-non whites, while whites earned 7.44 SD (\$30,509.13) more by having a college education ($p < .001$). Therefore, not only did the wage premium increase for all racial groups between 1962 and 2007, minorities also show a decrease in the wage gap with whites.

Limitations

Several limitations should be considered when interpreting the analyses presented here. The criteria by which the samples were collected in both analytical approaches were chosen to control for differences among sub-groups within the entire population. While they allow results to be more easily interpreted, they also limit the generalizability of the findings. For the purposes of this study, samples were limited to men, to avoid complicated relationships potentially related to the different social and civil trends for women, which were especially pervasive during the time period considered. Furthermore, in order to ensure comparability among measures of income, this study only considered pre-tax wages, that is money received as an employee, excluding any public benefits or investments, as well as only individuals considered self-employed. Members of the armed forces were also dropped from the sample, due to differences in pay scales, education requirements and career trajectories, which may have influenced measures of income.

Of particular concern when considering changes in college participation rates of time is the lack of archived data pre-1962. As mentioned previously, an attempt to isolate a certain phenomena as the causal mechanism for change necessitates an

understanding of the situation that existed prior to that phenomena to ascertain whether observable shifts or changes were already underway, and thus undermining and claims to causality. Unfortunately, IPUM-CPS data does not allow for a detailed study of college participation rates pre-affirmative action. Therefore, the presentation of changes or shift post-affirmative action must be taken with caution, as we cannot be certain that such changes were not already underway, or, alternatively, the result of some other systematic shock in years prior to 1962.

A number of additional characteristics that would have been ideal for use as control variables in the analytic approach undertaken in Approach #2 were also unavailable for use, most notably a measure of childhood socio-economic status, disability status, work experience and the type and quality of the educational institution from which the degree which have been shown in past literature to be positively related to wages (Fortin, 2006; Marcotte et al.,2005; Stapleton et al., 2003).

Conclusion

The results presented here challenge the notion of increased accessibility in higher education since affirmative action. According to one measure of accessibility considered here, the rate of college participation, the number of individuals actually participating in college given the number of individuals that are eligible for participation has decreased since 1962, for all individuals considered. That is while overall college participation may have increased, the proportion of college eligible individuals participating has decreased. Although some may take issue with overall decreased rates of participation, it is promising to consider the increased diversification of college participants since the onset of inclusionary policy. If the

goal of affirmative action, and other similar policies, was not make participation more accessible to the population at large, but rather to ensure the benefits of higher education were more evenly distributed among all groups of individuals, then the movement has succeeded. The idea, however, that inclusionary policies have caused unintended consequences resulting from a culture of overeducation cannot be supported.

A second set of analyses presented in this paper challenge the claim that returns from higher education, or college wage premiums, have decreased since proactive, inclusionary policies were implemented. Results presented here reveal college wage premiums not only remain, but also have increased, lending support for affirmative action. This interpretation of changes in the college-wage premium is limited, and therefore necessitates further research.

In order to fully understand changes in college wage premiums analysis should be performed to determine the adjusted premium after accounting for opportunity costs incurred as a result of college participation. Taking the college wage premium and its changes displayed in this paper at face value cannot provide a full explanation of how inclusionary policies and subsequent increases in college participation have changed the value of the college degree in the labor market. The price of attaining a bachelor's degree is costly, not only in terms of actual tuition dollars spent, but also in wages foregone during the years devoted to study. This is of particular importance since opportunity costs born by college participants today are likely, at least on average, much higher than they were before the time of a more diverse student body. Prior to policies such as affirmative action, most college

students and graduates came from high SES families, where both the need to work and the financial burden on tuition were not high. When the social efficiency approach began to define the purpose of higher education, the government took steps to ensure physical accessibility, but financial accessibility as well. In 1965, the Pell Grant program, part of the Higher Education Act, secured monetary aid directly to institutions for discretionary distribution among its students. By 1972, Congress had amended the Act and the government directly evaluated applications for federal aid according to tuition and room and board costs, as well as family background, imposing strict income eligibility requirements (McPherson and Schapiro, 1998). The policy worked to ensure the most marginalized applicants could afford education, and permitted increased low-income enrollment by 20 to 40 percent (Mumper, 2003).

The government-funded student aid program, however, quickly transformed into a loan-based system, and by 1978, “the Middle Income Student Assistance Act... removed the income eligibility from the guaranteed student loan program and allowed virtually all students to take out a government-guaranteed and –subsidized loan” (Mumper, 103). The result was increased financial pressure on the federal treasury and its subsequent inability to adequately fund the Pell Grant program. The price of higher education is now more expensive than ever before, with upward trends in tuition costs since the 1960s and with a constant dollar tuition increase of 166 percent between 1981 and 2002 (Mumper, 2003).

While the promise of increased earnings once permitted significant financial investment in education, degree holders no longer are guaranteed positive

monetary returns. “A college education will seem a worthwhile investment as long as college graduate earn sufficiently more than high school graduate – i.e. enough to offset expense of college plus the delay in entering the labor force” (Smith, 91). 1990). As Mumper (2003) argues the increase in opportunity costs incurred as a result of college participation may actually be most exaggerated for those who most inclusionary policies were intended to help in the first place; “... just as access to higher education is becoming an even more central element to achieving financial success, the opportunities for low-income students to participate in higher education are being sharply constricted [because of increasing expense].” This has forced low-income students to take out loans. Unfortunately, as Mumper (2003) quotes Richard Fossey (1998), “[m]any – low income students, single parents, and minority individuals in particular – [default]. And many more who do not default are heavily burdened by their student loan commitments. Without a question, a certain portion of students see the quality of their lives decline rather than improve because they borrowed money to finance their education” (104).

Further research must, therefore, attempt to quantify the actually opportunity costs being borne by college participants today in order to gain an accurate understanding of how more inclusive admission policies may have actually increased inequalities, as many critics are eager to suggest.

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Appendix: Descriptive and Analytic Tables

Table 1. Participation and eligibility ratios by year and race (n=72,097,356).

Year	Total College Eligible	Total College Participants	Percent Participation	Participation Ratio ¹	Eligibility Gap Ratio ²
1962					
White	2,499,185	1,773,618	0.710	1.000	1.000
Black	103,248	67,853	0.657	0.038	0.041
Other	23,402	18,492	0.790	0.010	0.009
Total	2,625,835	1,859,963	0.708	-	-
1964					
White	2,736,748	2,002,826	0.732	1.000	1.000
Black	112,493	99,499	0.884	0.050	0.041
Other	24,249	17,811	0.735	0.009	0.009
Total	2,873,490	2,120,136	0.738	-	-
1965					
White	2,840,034	2,108,310	0.742	1.000	1.000
Black	157,693	106,135	0.673	0.050	0.056
Other	28,476	17,028	0.598	0.008	0.010
Total	3,026,203	2,231,473	0.737	-	-
1967					
White	3,647,453	2,625,321	0.720	1.000	1.000
Black	165,592	111,365	0.673	0.042	0.045
Other	49,433	32,169	0.651	0.012	0.014
Total	3,862,478	2,768,855	0.717	-	-
1972					
White	4,857,344	3,637,621	0.749	1.000	1.000
Black	363,787	244,716	0.673	0.067	0.075
Other	74,125	49,913	0.673	0.014	0.015
Total	5,295,256	3,932,250	0.743	-	-
1977					
White	5,064,885	3,862,029	0.763	1.000	1.000
Black	502,269	350,272	0.697	0.091	0.099
Other	127,687	80,256	0.629	0.021	0.025
Total	5,694,841	4,292,557	0.754	-	-

Table 1 (Continued).

1982						
White	4,942,166	3,751,391	0.759	1.000	1.000	
Black	564,933	400,921	0.710	0.107	0.114	
Other	228,291	172,685	0.756	0.046	0.046	
Total	5,735,390	4,324,997	0.754	-	-	
1987						
White	4,805,393	3,717,592	0.774	1.000	1.000	
Black	557,703	430,396	0.772	0.116	0.116	
Other	256,071	190,250	0.743	0.051	0.053	
Total	5,619,167	4,338,238	0.772	-	-	
1992						
White	7,274,296	4,132,929	0.568	1.000	1.000	
Black	1,070,609	469,625	0.439	0.114	0.147	
Other	399,090	297,690	0.746	0.072	0.055	
Total	8,743,995	4,900,244	0.560	--	-	
1997						
White	7,155,563	4,053,217	0.566	1.000	1.000	
Black	1,163,765	514,797	0.442	0.127	0.163	
Other	479,587	300,312	0.626	0.074	0.067	
Total	8,798,915	4,868,326	0.553	-	-	
2002						
White	7,685,821	4,218,067	0.549	1.000	1.000	
Black	1,231,485	618,580	0.502	0.147	0.160	
Other	636,148	451,559	0.710	0.107	0.083	
Total	9,553,454	5,288,206	0.554	-	-	
2007						
White	8,048,348	4,530,323	0.563	1.000	1.000	
Black	1,403,958	631,077	0.449	0.139	0.174	
Other	816,027	539,012	0.661	0.119	0.101	
Total	10,268,333	5,700,412	0.555	-	-	

^{1, 2} Whites are the comparison category

Table 2. Demographics, education and income by race for the full-time working males aged 25 and older in 1962.

	White (n=16,655,361)	Black (n=1,433,243)	Other (n=196,970)	Total (n=18,285,574)
Income	40,622.7*** (23,714.5)	23,781.9*** (12,7257.4)	32,792.7*** (17,522.0)	39,218.4*** (23,434.2)
College Educated (%)***	2.0	0.6	0.00	1.8
Marital Status (%)***				
Married	88.9	83.6	76.9	88.3
Divorced	2.1	3.0	3.2	2.1
Widowed	1.3	3.1	6.7	1.5
Single	7.8	10.2	13.2	8.0
Residency (%)***				
City	39.4	16.2	44.8	37.6
Suburban	30.6	60.1	41.2	33.0
Rural	30.0	23.8	14.0	29.3
Industry (%)***				
Service	28.1	34.3	39.1	28.7
Sales	9.3	8.5	9.5	9.3
Manufacturing	34.8	23.5	19.6	33.7
Agriculture and Mining	9.2	16.3	6.9	9.7
Transp. And Comm.	9.5	6.3	7.1	9.2
Government	7.9	10.1	15.9	8.2
Age	42.4 (11.4)	41.8 (11.2)	41.0 (12.0)	42.3 (11.4)

*** p < .001; ** p < .01; * p < .05

Table 3. Demographics, education and income by race for the full-time working males aged 25 and older in 2007.

	White (n=33,772,580)	Black (n=4,260,211)	Other (n=2,590,047)	Total (n=40,622,838)
Income	50,798.6*** (42,053.5)	38,540.6*** (29,518.1)	46,295.1*** (40,646.9)	49,226.0*** (41,006.9)
College Educated (%)***	24.2	17.8	35.2	24.2
Marital Status (%)***				
Married	69.8	58.0	65.3	68.3
Divorced	10.5	10.1	6.9	10.2
Widowed	0.6	1.0	0.6	0.7
Single	19.1	30.9	27.2	20.9
Residency (%)***				
City	53.5	42.3	46.0	51.7
Suburban	27.8	46.5	46.2	31.2
Rural	18.7	11.2	7.8	17.1
Industry (%)***				
Service	31.6	39.1	44.0	33.2
Sales	14.4	12.9	12.4	14.1
Manufacturing	36.3	26.1	27.1	34.6
Agriculture and Mining	2.8	1.2	1.5	2.5
Transp. And Comm.	7.6	11.7	7.5	8.0
Government	6.7	8.6	6.8	6.9
Age	42.4** (11.0)	41.8** (10.6)	41.0** (11.0)	42.3** (11.0)

*** p < .001; ** p < .01; * p < .05

Table 4. Demographics, education and income by race for the full-time working males aged 25 and older in 1962.

	Does Not Hold a College Degree	Holds a College Degree	Total
Wages	38,855.0*** (22,914.6)	58,537.0*** (38,067.4)	39,218.4*** (23,434.2)
Race(%)***			
White	91.0	97.3	91.1
Black	7.9	2.7	7.8
Other	1.1	0.0	1.1
Marital Status (%)***			
Married	88.3	88.5	88.3
Divorced	2.2	0.7	2.1
Widowed	1.5	0.0	1.5
Single	8.0	10.8	8.0
Residency (%)***			
City	37.5	44.1	37.6
Suburban	33.1	28.5	33.0
Rural	29.4	27.4	29.3
Industry (%)***			
Service	28.3	48.4	28.7
Sales	9.2	10.8	9.3
Manufacturing	34.0	20.1	33.7
Agriculture and Mining	9.8	2.5	9.7
Transp. And Comm.	9.3	5.1	9.2
Government	9.3	10.3	8.2
Age	42.9*** (11.4)	39.8*** (11.2)	42.8*** (11.4)

Table 5. Demographics, education and income by race for the full-time working males aged 25 and older in 2007.

	Does Not Hold a College Degree	Holds a College Degree	Total
Wages	41,697.1*** (29,840.0)	72,822.0*** (58,537.7)	49,226.0*** (41,006.9)
Race(%)***			
White	83.20	83.0	83.10
Black	11.40	7.7	10.50
Other	5.40	9.3	6.40
Marital Status (%)***			
Married	67.6	70.2	68.3
Divorced	11.1	7.5	10.2
Widowed	0.7	0.5	0.7
Single	20.5	21.8	20.9
Residency (%)***			
City	42.4	50.4	51.7
Suburban	25.9	29.2	31.2
Rural	16.8	8.0	17.1
Industry (%)***			
Service	28.5	47.9	33.2
Sales	14.8	11.7	14.1
Manufacturing	38.4	23.0	34.6
Agriculture and Mining	3.1	0.8	2.5
Transp. And Comm.	8.3	7.1	8.0
Government	6.3	8.9	6.90
Age	42.4*** (11.0)	42.0*** (10.9)	42.3*** (11.0)

*** p < .001; ** p < .01; * p < .05

Table 6. Effects of College Education and Race on Wages (in 2007 dollars) for Full-Time Male Workers in 1962¹ (n = 18,285,574).

	Model1	Model2	Model3	Model4
College Educated ²	0.840***	0.799***	0.825***	0.822***
Black ³		-0.705***	-0.677***	-0.631***
Other		-0.318***	-0.303***	-0.324***
<i>Labor Characteristics</i>				
<i>Occupational Industry⁴:</i>				
Service			-0.274***	-0.241***
Sales			-0.003**	0.001
Manufacturing			-0.049***	-0.048***
Agriculture/Mining			-0.294***	-0.232***
Trans. and Comm.			-0.061***	-0.061***
<i>Demographic Characteristics</i>				
Age/10				0.027***
<i>Marital Status⁵:</i>				
Married				0.393***
Divorced				0.235***
Widowed				0.281***
<i>Residency⁶:</i>				
City				0.221***
Rural				-0.221***
Constant	-0.016***	0.044***	0.171***	-0.340***
R ²	.013***	.050***	.064***	.110***
ΔR^2	-	.037***	.014***	.046***

*** p < .001; ** p < .01; * p < .05

¹ unstandardized coefficients; outcome is centered and z-scored (coefficients are in SD units).

² respondent has indicates highest level of education is a bachelors degree.

³ all racial/ethnic groups compared to Whites.

⁴ all industries compared to Government Occupations.

⁵ all groups compared to Single.

⁶ all regions compared to Suburban.

Table 4. Effects of College Education and Race on Wages for Full-Time Male Workers in 2007¹ (n = 40,622,837).

	Model1	Model2	Model3	Model4
College Educated ²	0.759***	0.757***	0.766***	0.744***
Black ³		-0.251***	-0.252***	-0.205***
Other		-0.194***	-0.188***	-0.163***
<i>Labor Characteristics</i>				
<i>Occupational Industry⁴:</i>				
Service			-0.163***	-0.122***
Sales			-0.151***	-0.116***
Manufacturing			-0.100***	-0.075***
Agriculture/Mining			-0.123***	-0.063***
Trans. and Comm.			-0.015***	-0.003***
<i>Demographic Characteristics</i>				
Age/10				0.070***
<i>Marital Status⁵:</i>				
Married				0.349***
Divorced				0.176***
Widowed				0.008***
<i>Residency⁶:</i>				
City				0.124***
Rural				-0.132***
Constant	-0.184***	-0.145***	-0.032***	-0.650***
R ²	.106***	.113***	.116***	.156***
Δ R ²	-	.007***	.003***	.040***

*** p < .001; ** p < .01; * p < .05

¹ unstandardized coefficients; outcome is centered and z-scored (coefficients are in SD units).

² respondent has indicates highest level of education is a bachelors degree.

³ all racial/ethnic groups compared to Whites.

⁴ all industries compared to Government Occupations.

⁵ all groups compared to Single.

⁶ all regions compared to Suburban.