Undergraduate Research Fellowship Working Paper Series

Title:

"Examining the Relationship between Affirmative Action Policy and Graduation on U.S. College Campuses"

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Introduction

Attending college is one of the many goals that high school students across America look forward to. For a small percentage of these students, being admitted to his or her dream college would mean obtaining exceptional test scores, near-perfect grades, and notable extracurricular activities. But an additional factor that has been considered in college admissions for decades is the student's race. For numerous public universities and even some prestigious private colleges, race was often considered when admitting students. However, this practice has recently been nullified by the Supreme Court and will now change the criterion of student admissions in these once race-conscious schools.

This Supreme Court decision has potential to impact college admissions, enrollment, and graduation of minority students. Sander (2004) suggest that minority groups can be harmed by affirmative action admission policies because they can be accepted to a school they are not qualified for, and therefore struggle to graduate. This theory has been named mismatch theory. Sander's analysis considers a narrow population of law school students. I add to the research on this topic by examining the impact of affirmative action policies in the United States on the graduation rates of ethnic minorities pursuing bachelor's degrees. My estimates of the impact of affirmative action bans prior to the 2023 Supreme Court decision can provide valuable information about the potential effects of the nationwide affirmative action ban going forward.

Background on Affirmative Action

The race of a student was recognized and considered in higher education to eliminate race-based discrimination in a program known as affirmative action (Robinson, 2023). This program allowed universities to promote inclusivity and increase diversity. But after decades of universities utilizing this program, the Supreme Court officially banned the practice in 2023. The Students for Fair Admissions (SFFA), a nonprofit organization whose purpose is to defend human and civil rights secured by law, challenged Harvard College's admissions process (*STUDENTS FAIR ADM. v. PRESIDENT FELLOWS HARVARD*, 2023). In the case SFFA *v. Harvard*, it was decided that schools, such as Harvard College and the University of North Carolina at Chapel Hill, that considered race as an element for student admissions, were violating the Equal Protection

Clause of the Fourteenth Amendment, which states, "…No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States…" revealing that no citizen should be denied equal access, further justifying the court's decision (United States Congress, n.d.). Ultimately, the decision prevents colleges and universities from considering race in future admissions, removing the privilege that some students had when being admitted into a university.

Students were not granted this privilege to discriminate, instead, race was considered along with a student's qualifiable traits when applications were reviewed. To be admitted into a university, students' academic records are analyzed. The record helps a university's admissions board determine whether that student is best fit, with inferences from class rank, G.P.A, and even community involvement. With the large pool of applicants that universities receive each year, it is questioned how institutions can diversify the incoming class of students. While white students made up about half the population in public schools nationwide at almost 49%, for many private colleges, roughly 67% of the population were white (Downs, 2021). These statistics reveal the imbalance between the socioeconomic and racial populations of college classes. Some colleges have implemented programs that address these issues to diversify their class populations. In 1997, Texas passed the Texas House Bill 588, otherwise known as the "Top 10% Rule" which admits incoming students who are in the top 10% of their high school class to all state-funded universities, creating diverse student bodies. It is identified as a race-neutral program, addressing the de facto segregation of Texas public high schools. While this policy has resulted in Texas universities accepting students from different regions of the state, it has also received backlash from parents whose children attend well-resourced schools and now find it difficult to be admitted into the state's flagship universities (McGee, 2023). Due to consistent growth in the number of Texas high school graduates, the University of Texas at Austin has had to decrease the automatic admission rate to 6% and McGee reveals that "75% of each freshman class [at UT Austin] must be admitted under the Top 10% Plan while the remaining 25% would be admitted through a holistic review process…" Rodney J. Andrews (2007) found that with this plan, the conditional probability of admissions did not decline appreciably for students, however the percentage of applicants that universities received did decline. While the plan successfully resulted in qualified students enrolling in Texas' public

universities, it did discourage students who were not in the top 10% from sending their score reports to the universities. Andrews' results indicate that while a method like the Top 10% Plan could increase diversity, it does not guarantee that all students, especially low-income, will participate. State-funded Texas universities then used a 2-step admissions process for admitting students to promote inclusivity. In the case *Fisher v. University of Texas at Austin*, Abigail Fisher "alleged that the University's consideration of race disadvantaged her and other Caucasian applicants, in violation of the Equal Protection Clause" (2016). Factually, along with Texas' 10% admissions policy, their public universities used a holistic review when admitting the remainder of the freshman class by combining an applicant's academic index and personal achievement index, which included race (*Fisher v. University of Texas at Austin*, 2016). Since Fisher was not in the top 10% of her senior class, she was not considered for automatic admission, therefore her application was reviewed by the admissions holistic approach. The district court ruled in favor of the university since its use of race was a narrowly tailored means for diversifying the school, supporting an earlier overruling in *Grutter v. Bollinger*.

In the case *Grutter v. Bollinger*, Barbara Grutter, a white Michigan resident, was rejected from the University of Michigan Law School and accused the president, Lee Bollinger, of violating her rights. Considering that the school had "adopted an admissions policy that gave applicants belonging to certain racial minority groups a greater chance of admission than students with similar credentials from other racial groups," Grutter believed that the policy constituted discrimination in violation with the Fourteenth Amendment (*Grutter v. Bollinger*, 2003). Grutter's above average G.P.A of 3.8 and a LSAT score of 161 are factors considered when being admitted to the law school, but the University of Michigan also uses "soft variables," such as "recommenders' enthusiasm, the quality of the undergraduate institution and the applicant's essay, and the areas and difficulty of undergraduate course selection" for admissions (*Grutter v. Bollinger*, 2003). The use of "soft variables" does not indicate that a student's race is being considered but allows the university to practice inclusion by considering factors outside of the student's academic standing. Although the District Court reasoned with Grutter, the Sixth Court reversed and referred to Justice Powell's decision in the landmark case, *University of California Regents v. Bakke*, where the court ruled "affirmative action programs that take race into account can continue to play a role in the college admissions process, since

creating a diverse classroom environment is a compelling state interest under the Fourteenth Amendment" (1978). Additionally, the court also had to settle *Gratz v. Bollinger* where Jennifer Gratz and Patrick Hamacher, both Caucasian, challenged the University of Michigan's undergraduate affirmative action program. After applying as residents of Michigan for early admission to the College of Literature, Science, and Arts, both individuals were denied admission and classified as not being competitive enough to be admitted on first review. When analyzing the university's admission process, it was discovered that applicants were ranked on a 150-point scale, with 100 points generally guaranteeing admission, and applicants who were a predominate minority or from a disadvantaged school given 20 additional points (McBride, 2006). While the point system was rescinded, adjacent to *Grutter v. Bollinger*, the court decided that the university presented evidence that supported their efforts to diversify their student body, constituting a compelling governmental interest. Therefore, the University of Michigan's policy was justified since the subject of race was being used to remedy the disadvantages of minority groups.

Cases opposing the use of race-based admissions in public institutions were produced by the belief that universities were violating the Equal Protection Clause of the US Constitution. However, university efforts to increase class diversity overturned these cases, justifying the use of affirmative action programs. The Supreme Court's ban of affirmative action programs concluded that it violated Title VI of the Civil Rights Act, which states, "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance" (U.S. Department of Education, 2023). Consequently, universities that had previously implemented the program must use a different approach for admitting underrepresented students. This includes focusing on students who need financial aid, or admitting students from segregated or underfunded regions which bridges the gap between affluent and poor students. Inclusive approaches will diversify a university's incoming class without the focus of race.

Without race, universities must develop new methods for admitting students while increasing diversity. Unless universities conduct a transparent and innovative way to maintain inclusivity within student populations, they will continue to have disproportionately large white populations with lack of minority races.

When observing institutions that had already banned the use of affirmative action prior to the Supreme Court's decision, I discovered that minority student populations decreased, and white student populations increased. States such as Michigan and California had already eliminated the use of affirmative action programs, which can be seen in Table 1, despite having some of the most highly rated public universities in the nation, which receive thousands of high-quality applications every year. In 2006, the University of Michigan banned race-conscious admissions which resulted in a drop of enrollment for Black and Native American students (Saul, 2022). The University of Michigan has adopted outreach programs as a method for increasing their diversity by recruiting black students. However, these programs are costly; in California, the University of California system has spent more than a half-billion dollars to increase diversity. In Ohio, Miami University has seen their white population trending higher over the past few years while their minority populations continue to trail (The Editorial Board, 2023). The college enrollment gap between Black and Hispanic students, and White and Asian students is expansive. This gap has been due to the disparities of academic preparation within the different communities. With a student's chance at obtaining a higher education related to their socioeconomic situation, well-off students are more likely to attend college than disadvantaged students who are low-income. The costs of attending university and the accessibility to attend are both factors that students, especially low income, must consider.

Ultimately, universities will now have colorblind admissions, but it is also possible the continued practice of legacy admissions could impact minority populations. Legacy admissions are commonly utilized in selective institutions which boost the applications of students who are successors of an alumni of that school. Like affirmative action, legacy admissions give privilege to qualified students who apply to these schools while limiting the possibility of another student from attending. These practices can discourage students who are applying for undergraduate programs, resulting in disparities within student enrollment. This is evident when observing states where minority populations are increasing yet university enrollments do not reflect these numbers. In Florida, the state experienced a 12% increase of the black population in 2020, yet the state's flagship school, the University of Florida, resulted in a 1% decrease, making the student body of the black population only 6% of the overall university population (Donadel, 2023). These schools along with others

that do not consider race as a factor for student admissions must administer new approaches for enrolling underrepresented groups, otherwise the minority population will continue to decline.

These inclusive approaches can be identified by programs that do not recognize race but rather address students' socioeconomic reports, academic records, and other factors. For example, some universities use need-blind admissions when admitting students, meaning that an applicant's financial status is not considered. This is commonly applied in well-funded colleges that acquire large endowments, such as Harvard and Yale, and can meet the needs for matriculated students— attracting low-income applicants. However, need-aware admissions consider a student's ability to afford the college's tuition and excess fees to determine whether he or she would need financial aid. While need-awareness recognizes and meets a student's financial capacity, it also limits the number of students that can be admitted due to the college's annual financial aid budget. For many American colleges and universities, they have a limited financial aid budget, requiring need-aware admissions (Malatesta, 2023). Therefore, these colleges may choose students who are capable of paying university fees over students who would need financial assistance, limiting admissions for low-income students.

Universities must proactively undertake initiatives to foster inclusivity within their student bodies to uphold and sustain diversity. Without the consideration of race as a factor for matriculating students, student admission boards should implement a holistic academic review of a student. Such factors include considering the secondary education a student has received based on location and whether it was a public or private school. This would be an equitable approach that would provide fair consideration for students that are at an academic, socioeconomic disadvantage.

Data and Methodology

It is evident that affirmative action regulations have a significant impact on enrollment and admissions. Nonetheless, less research, nonetheless, has looked at how these regulations affect undergraduate students' graduation rates. I use college level data from the National Center for Education Statistics (NCES) to examine the impact of affirmative action policies on college graduation outcomes for different ethnicity

groups. The NCES Integrated Postsecondary Education Data System (IPEDS) contains college and university level information about graduation rates, faculty, average tuition, private vs. public status, financial aid, etc. My empirical analysis sample consists of 1,351 4-year non-profit colleges and universities in the United States from 2001-2018. Summary statistics for this sample of schools are provided in Table 2. We can see that 15.5% of the observations in the data faced an affirmative action ban which helps analyze the variation in policy across the U.S. In addition, 60% of observations in my study are from a private college or university which helps analyze if there is a difference in likelihood of graduation between private and public schools. To examine the impact of affirmative action bans on graduation outcomes, I estimate the following multivariate regression model:

$$\gamma_{it} = \beta_0 + \beta_1 BAN_{it} + \beta_2 \chi_{it} + d_t + \varepsilon_{it}$$

Where γ_{it} is my outcome of interest. This is the graduation rate, by ethnicity, of students enrolled at college "i" in year "t." BAN_{it} is an indicator that takes a value of 1 if the university "i" faces an affirmative action ban in year "t." Graduation rate is measured by dividing the total number of students from a group that complete a degree within six years in the school by the total number that enrolled in their cohort. χ_i is a vector of university level controls that I believe also impact campus graduation. These controls include whether the school is privately controlled, if the school is a HBCU, the total undergraduate enrollment, 75th percentile SAT math and verbal scores of students, tuition, the percentage of students receiving any financial aid, and total faculty employed at the school. The variable d_t are year fixed effects that control for time specific shocks that impact all universities. ε_{it} is a random error term. β_1 is my coefficient of interest and it measures the impact of an affirmative action ban on the proportion of students. For example, if β_1 is equal to -2.00, this means that a ban on affirmative action is associated with a 2-percentage point decrease in the graduation rate of students on college campuses.

As I discussed earlier, private, and public schools may have different objectives when admitting students that can ultimately impact graduation rates, so I also estimate additional multivariable regression models that include an interaction term between indicator variables for affirmative action bans and private school status.

$$\gamma_{it} = \phi_0 + \phi_1 \text{BAN}_{it} + \phi_2 \text{PRIVATE}_{it} + \phi_3(\text{BAN}_{it} * \text{PRIVATE}_{it}) + \phi_4 \chi_{it} + d_t + \varepsilon_{it}$$

PRIVATE_{it} is an indicator that takes a value of 1 if school "i" is a private college or university in year "t," and all other variables are defined similarly to my previous regression model. In this model, ϕ_2 estimates the impact that private schools have on graduation rates compared to public colleges or universities. For example, if ϕ_2 is equal to -2.00, this means that the graduation rate is 2-percentage points lower at private schools relative to public schools. Lastly, ϕ_3 estimates the additional impact that private schools have on graduation rates if they face an affirmative action ban compared to public colleges or universities. For example, if ϕ_3 is equal to -2.00, this means that the graduation rate is 2-percentage points lower at private schools with an affirmative action ban relative to public schools.

Results

After conducting a linear regression analysis, I found the impact that the affirmative action ban had on graduation rates for various racial groups. Firstly, when looking at column 1 for Table 3, the coefficient on affirmative action ban means that when there is a ban on affirmative action admissions, the graduation rate for black students decreased by 0.9621 percentage points. This result is statistically significant at a 1% level. The coefficient for the second row tells us that graduation rates are 7.4654 percentage points lower for black students at private colleges relative to public colleges, while also being statistically significant at the 1% level. When observing the coefficient for the HBCU indicator, we see that the graduation rate for black students is 13.1708 percentage points higher relative to non-HBCUs and is also significant at a 1% level. The rest of the coefficients are interpreted as the percentage point change in graduation rates for black students with a 1 unit change in the indicated variable. In column 2, I show the results for my model that includes an interaction term between private school and affirmative action ban indicators. The coefficient on affirmative action ban decreased to -0.4714. Also, the coefficient for the interaction term, Ban*Private, is -0.7917, meaning that the graduation rate for black students is -0.4714 percentage points lower in public universities that face a ban on affirmative action, and that rate drops by an additional 0.7917 percentage points for black students when they

are at a private university that faces an affirmative action ban. However, these estimates are no longer statistically significant.

In column 3, the graduation rate for Hispanics increases by 2.0145 percentage points when there is a ban on affirmative action admissions and is significant at a 1% level. The coefficient of -2.3012 in the second row represents the percentage point decrease of graduation rates for Hispanics at private colleges relative to public colleges (also significant). The coefficient for the HBCU indicator represents that the graduation rate for Hispanic students is 3.2961 percentage points higher relative to non-HBCUs and is also significant at a 1% level. The rest of the coefficients are interpreted as the percentage point change in graduation rates for Hispanic students with a 1 unit change in the indicated variable. In the fourth column, the coefficient on affirmative action ban increased to 2.5146 but the coefficient for the interactive term is -0.8071. This highlights that the graduation rate for Hispanic students is 2.5146 percentage points higher in public universities that face a ban on affirmative action, but that rate drops by 0.8071 percentage points for Hispanic students when they are at a private university that faces an affirmative action ban.

In column 5, the graduation rate for Asian students increases by 1.0898 percentage points when there is an affirmative action ban. The coefficient of -4.6569 in the second row represents the percentage point decrease of graduation rates for Asians at private colleges relative to public colleges which is statistically significant. The coefficient for the HBCU indicator represents that the graduation rate for Asian students is 3.5753 percentage points higher relative to non-HBCUs and is also significant at a 1% level. The rest of the coefficients are interpreted as the percentage point change in graduation rates for Asian students with a 1 unit change in the indicated variable. In the sixth column, the coefficient on affirmative action ban increased to 2.2952 but the coefficient for the interactive term is -1.9451. This highlights that the graduation rate for Asian students is 2.2952 percentage points higher in public universities that face a ban on affirmative action, and that rate drops by 1.9451 percentage points for Asian students when they are at a private university that faces an affirmative action ban.

In column 7, the coefficient on affirmative action ban means that when there is a ban on affirmative action admissions, the graduation rate for white students decreases by 0.7134 percentage points which is

statistically significant at the 1% level. The coefficient of -0.0470 in the second row represents the percentage point decrease of graduation rates for white students at private colleges relative to public colleges. The coefficient for the HBCU indicator represents that the graduation rate for white students is 7.8021 percentage points lower relative to non-HBCUs (significant at a 1% level). The rest of the coefficients are interpreted as the percentage point change in graduation rates for white students with a 1 unit change in the indicated variable. In the last column, the coefficient on affirmative action ban increased to 1.8195 and the coefficient for the interaction term is -4.0871 meaning that the graduation rate for white students is 1.8195 percentage points higher in public universities that face a ban on affirmative action, but that rate drops by an additional 4.0871 percentage points for white students when they are at a private university that faces an affirmative action ban relative to a public university with a ban.

Conclusion

Affirmative action bans affect ethnicity groups in different ways. Based on my results, white students, and black students see a decline in graduation rates from universities that have had an affirmative action ban. Whereas Hispanic students, and Asian students seem to benefit from an affirmative action ban. If Sander's mismatch theory were to hold true for these students, then we'd expect to see the graduation rates of black and white students increase when there is a ban on affirmative action, but my estimates show the opposite of this. Interestingly, the increase in Hispanic and Asian student graduation rates when an affirmative action ban is present may suggest that affirmative action policies lead to them being crowded out of colleges and universities that they would have successfully graduated from. However, all ethnicities saw a decrease in graduation rates at a private school with a ban compared to a public school with a ban, signifying the difference in the criterion across types of institutions. Considering that public universities have a mission to serve all qualified students in their state, the two institutions have different missions to follow based on the students they serve. With additional data on individual student level, I can discover how the affirmative action ban impacts the racial diversity on campuses based on admissions and/or enrollment. Ultimately, without

affirmative action, universities must use different measures for admitting students by devising effective approaches to promote and sustain diversity on campuses.

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Appendix 1: Tables

Table 1

States with an affirmative action ban

States	Banned A.A Programs	S.C Decision Banning A.A
AZ	2010	2023
CA	1978-1996	2023
FL	1999	2023
ID	2020	2023
LA	1996-2003	2023
MI	2006	2023
MS	1996-2003	2023
NE	2008	2023
NH	2012	2023
OK	2012	2023
TX	1996-2003	2023
WA	1998	2023

Table 2

Summary Statistics

VARIABLES	(1) N	(2) Mean	(3) SD	(4) Min	(5) Max
Black Graduation Rate	17,217	46.259	23.095	0	100
Hispanic Graduation Rate	17,217	50.597	23.919	0	100
Asian Graduation Rate	17,217	56.100	27.343	0	100
White Graduation Rate	17,217	59.159	17.644	0	100
Affirmative Action Ban	17,217	0.155	0.362	0	1
Private	17,217	0.614	0.487	0	1
HBCU	17,217	0.026	0.158	0	1
SAT 75th Verbal	17,217	594.215	66.705	330	800
SAT 75th Math	17,217	599.901	68.728	338	800
Total Enrollment	17,217	1138.600	1329.850	2	10,099
Tuition	17,217	18528.69	12684.32	0	56,331.00
Percentage with Financial Aid	17,217	87.392	14.200	0	100
Total Faculty	17,217	613.310	802.042	0	9,064

Note: Sample includes 4-year public and 4-year non-profit private colleges and universities in all the United States (including Washington DC, Puerto Rico, and the US Virgin Islands). A total of 1,351 colleges and universities are represented in this sample, and observed from 2001-2018.

Table 3

Relationship between affirmative action bans and graduation rate, by ethnicity

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	Black Students		Hispanic Students		Asian Students		White Students	
Affirmative Action Ban	-0.9621***	-0.4714	2.0145***	2.5146***	1.0898**	2.2952***	-0.7134***	1.8195***
	(0.3730)	(0.6064)	(0.3998)	(0.6500)	(0.4898)	(0.7961)	(0.2200)	(0.3569)
Private	-7.4654***	-7.4332***	-2.3012***	-2.2684***	-4.6569***	-4.5780***	-0.0470	0.1190
	(0.6196)	(0.6204)	(0.6641)	(0.6650)	(0.8135)	(0.8145)	(0.3655)	(0.3651)
Ban * Private		-0.7917		-0.8071		-1.9451*		-4.0871***
		(0.7714)		(0.8269)		(1.0128)		(0.4540)
HBCU	13.1708***	13.2081***	3.2961***	3.3341***	3.5753***	3.6669***	-7.8021***	-7.6098***
	(0.8810)	(0.8818)	(0.9444)	(0.9452)	(1.1568)	(1.1577)	(0.5197)	(0.5190)
Total enrollment	0.0028***	0.0028***	0.0026***	0.0026***	0.0020***	0.0019***	0.0032***	0.0030***
	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0003)	(0.0001)	(0.0001)
SAT 75th Verbal	0.1095***	0.1095***	0.0885***	0.0885***	0.0757***	0.0757***	0.0602***	0.0602***
	(0.0055)	(0.0055)	(0.0059)	(0.0059)	(0.0072)	(0.0072)	(0.0032)	(0.0032)
SAT 75th Math	0.0330***	0.0330***	0.0559***	0.0559***	0.0792***	0.0792***	0.0798***	0.0800***
	(0.0055)	(0.0055)	(0.0059)	(0.0059)	(0.0073)	(0.0073)	(0.0033)	(0.0033)
Tuition	0.0008***	0.0008***	0.0006***	0.0006***	0.0006***	0.0006***	0.0005***	0.0005***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Percentage with Financial Aid	-0.1882***	-0.1872***	-0.1649***	-0.1639***	-0.0738***	-0.0713***	-0.0657***	-0.0606***
	(0.0121)	(0.0121)	(0.0130)	(0.0130)	(0.0159)	(0.0159)	(0.0071)	(0.0071)
Total Faculty	-0.0010***	-0.0010***	-0.0006**	-0.0006**	0.0008**	0.0008**	-0.0017***	-0.0017***
	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0004)	(0.0004)	(0.0002)	(0.0002)
Constant	-30.4490***	-30.5881***	-32.7255***	-32.8673***	-39.3595***	-39.7012***	-28.8581***	-29.5763***
	(2.2880)	(2.2920)	(2.4525)	(2.4568)	(3.0043)	(3.0093)	(1.3497)	(1.3489)
Observations	17,217	17,217	17,217	17,217	17,217	17,217	17,217	17,217
R-squared	0.4304	0.4305	0.3899	0.3899	0.2994	0.2995	0.6604	0.6620

Notes: Standard errors in parentheses.

All specifications include year fixed effects. *** p<0.01, ** p<0.05, * p<0.1