RACE AND COLLEGE ADMISSIONS: AN ALTERNATIVE TO AFFIRMATIVE ACTION?

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Abstract—During the late 1990s, several states eliminated affirmative action admissions policies at their public colleges. Some of these states substituted a program that grants admission to the top *x*% of each high school's graduating class. These new programs were instituted in efforts to restore minority college enrollments to their prior levels. This paper finds that the preferences given to minority applicants under affirmative action are large and that the minority share of admitted students in top-tier institutions would fall substantially after eliminating these preferences. However, there are not sufficient numbers of minorities in the top *x*% of their high school for the expected recovery from an *x*% program to be very large. Furthermore, most minority beneficiaries would have been accepted without these programs. As a result, *x*% programs are unable to replace traditional affirmative action and maintain the share of minority students.

I. Introduction

THE use of affirmative action in college admissions has been controversial since its inception in the 1960s. Despite the landmark 1978 Supreme Court decision, *The Regents of the University of California v. Bakke,* which allowed for the use of race-based preferences as a means of fostering diversity, affirmative action admissions policies have been under continual legal and political assault. The legal dimension of this struggle has been recently settled (for the near future) by the Supreme Court's 2003 decisions regarding the University of Michigan's undergraduate and law school admissions in *Gratz v. Bollinger* and *Grutter v. Bollinger.* These decisions largely reaffirm the *Bakke* decision and allow universities to continue to use race as a factor in admissions, so long as the admissions system is not rigid or mechanical, like the University of Michigan's undergraduate system in the court's view.

Nonetheless, opponents of affirmative action are continuing their efforts by advocating referenda to ban affirmative action, continuing a trend begun in the mid-1990s. In 1995, the University of California's Board of Regents voted to eliminate all campus affirmative action programs based on race or sex. California's Proposition 209, which passed in 1996, reinforced the UC Regents' resolution by banning race-based preferences in public education, employment, and contracting. The state of Washington followed with a similar voter-enacted ban in 1998. In response to the decision in *Hopwood v. Texas,* the state of Texas ended the use of racial preferences at state schools beginning in the fall of 1997. Following these policy changes, minority enrollment at the flagship schools in several of these states plummeted and legislators and college administrators sought a method to boost these declining enrollments.

As an alternative, some states instituted what are known as *top-x%* programs. These programs guarantee admission to a public college to students who graduate in the top *x*% of their high school.[1] The first such program was instituted in Texas in 1997. Then-Governor George W. Bush helped enact a plan that guarantees university admittance for high school students who are in the top 10% of their class. In 1999, the UC Regents approved a policy backed by Governor Gray Davis, which guarantees admission to one of the UC schools to the top 4% of graduates in each high school, provided that the student completes specified coursework. Finally, in 2000 Florida's Governor, Jeb Bush, obtained approval for his *Talented 20* plan, which simultaneously bans race and gender preferences in college admissions and promises that students who graduate in the top 20% of their high school class and complete a college preparatory curriculum will get into at least one of the ten state universities.

The goal of this paper is to assess the potential efficacy of these *x*% programs as a substitute for traditional affirmative action policies. The answer to this question is an important public policy concern, because access to top-tier colleges can improve admittees' life prospects and quality of life. For example, there is clearly a wage premium associated with college attendance; estimates of the premium for each additional year of education range from 4% to 10%. This wage premium has increased over recent decades and was a primary source of increasing income inequality in the 1980s (Ashenfelter and Rouse, 1999). Furthermore, the quality of the institution at which minority students matriculate may have an influence on their futures. For example, Kane (1998) finds that attending a more selective college is associated with higher graduation rates and higher earnings for both minority and nonminority students.[2] Furthermore,

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[1] Throughout this text, I will often use the term "college" to refer to both colleges and universities.

[2] Most of the literature agrees that college selectivity and other college qualities raise the students' economic returns (see Loury & Garman, 1995; Behrman, Rosenzweig, & Taubman, 1996; Daniel, Black, & Smith, 1997; Hoxby, 1998; and Brewer, Eide, & Ehrenberg, 1999). However, these findings are challenged by the recent work of Dale and Krueger (2002). Once they control for students' unobservable characteristics by matching

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Hoxby (1998) and Brewer, Eide, and Ehrenberg (1999) find some evidence that this return to selectivity has increased during the last few decades. Bowen and Bok (1998) conclude that minorities receive a greater premium for attending a top-tier school than white students, and Kane (1998) finds that the gains associated with attending a more selective college are higher for those with lower test scores. Finally, the quality of higher education may affect the recipient's noneconomic outcomes such as the likelihood of divorce (Bowen and Bok, 1998).

An implicit goal of top-$x\%$ proposals is to create college campuses whose racial and ethnic composition reflects the state's composition. It has been assumed that these programs will achieve diversity, largely due to the degree of public high school segregation. For example, suppose that high schools were completely segregated. Then, by necessity, the composition of the top $x\%$ of these segregated high schools would match the racial and ethnic composition of the state's high school students. However, though highly segregated, high schools are not completely segregated. Therefore, it is not necessarily the case that the composition of the top $x\%$ mirrors the overall student body. Nonetheless, some believe that these programs could restore minority shares of enrollment to their prior levels. In particular, the press has highlighted the Texas program as restoring minority undergraduate enrollment in Texas public colleges.[3]

I argue, and I demonstrate in the body of this paper, that such perceptions of top-$x\%$ programs' effects are wrong. In particular, the apparent positive effects found in Texas cannot be attributed to the top-$x\%$ program; most likely, they are due to greater efforts to recruit minority students and a growing minority population within the state. Measures of program effects using the absolute number of minority students enrolled or using minorities' share of enrollment are misleading during periods of time in which the underlying minority population is growing. During such periods, a minority share that is constant over time actually reflects lost ground, as it means that college composition has in fact grown less representative of the composition of the overall population.

This paper demonstrates how the combination of the elimination of affirmative action programs and the institution of $x\%$ programs affects minority access to public colleges. Section II presents the conceptual framework for the simulation, and section III reviews the data used. Section IV presents the regression results and a simulation of the effect of eliminating affirmative action. I show that the preferences given to minority students in admissions exist at both top-tier and middle-tier schools and are largest at the most selective institutions. Though these preferences are large, the overall effects on the quality of minority students' placements are modest, due to the students' submitting multiple applications. As a result, the elimination of affirmative action only slightly widens the quality gap between the best colleges at which minority and nonminority students are accepted. Section V demonstrates that instituting $x\%$ programs does little to offset the reductions in minority shares. Effectively, there are not enough minority students in the top $x\%$ of their high school for the program to maintain minority enrollment shares. Furthermore, most minority students who are in the top $x\%$ would be accepted without the program anyhow. Thus, the top-$x\%$ programs cannot greatly enhance their prospects.

II. Conceptual Framework

The Texas top-10% program, which began in 1997, has the longest history and thus may provide insight into the effectiveness of top-$x\%$ programs generally. However, in addition to the top-10% program, other programs were instituted simultaneously that could have affected minority enrollments. For example, Longhorn Opportunity Scholarships were established and funded by University of Texas alumni, to provide full tuition, room, and board for students who are in the top 10% and who come from specified under-represented high schools (Ball, 2000). These scholarships will undoubtedly have their own effect on the enrollment decisions of minority recipients. Similarly, the University of Texas at Austin and Texas A&M University began allocating scholarships to students who had overcome adversities (Selingo, 1999a). Additionally, after *Hopwood,* several neighboring states increased their recruitment of Texas minority students, which may have lured some students away from Texas colleges (Selingo, 1999b).

Kain and O'Brien (2001) evaluate the change in minority enrollment at Texas A&M University and the University of Texas campuses at Austin and Dallas after the implementation of the top-10% rule. They find very small rebounds for black and Hispanic students. Using their coefficients, I calculate a 15% rebound for black students and a 4% rebound for Hispanic students. Their analysis is a general equilibrium finding which includes changes in recruitment and changes in applications and other student behaviors. However, it is difficult to distinguish the direct effect of the Texas top-10% program from that of other concurrent events. Additionally, it is not clear how similar these results would be in other states or if the policy were implemented nationally.

Rather than use the Texas experience, this paper simulates the elimination of affirmative action and the introduction of a top-$x\%$ program for a nationally representative sample of 1992 high school seniors. First, I estimate the degree of preference received by minority college applicants. The parameters from this estimation are then used to predict what would have happened to these students' applications if race-based preferences were eliminated. I then look at the new distribution of students across colleges of varying quality, by race and ethnicity. Second, based on the

students who were accepted and rejected by similar-quality colleges, they do not find a significant benefit for attending a more selective college.

[3] For example, see Wilgoren (1999) and Steinberg (2000).

student's transcript, I determine if he or she is in the top $x\%$ of his or her high school class and would receive automatic admittance. After simulating the top-$x\%$ program, I then evaluate whether the program restores minority shares to their levels before the removal of affirmative action. If we assume that the minority share of admitted students under affirmative action reflects the desired level, based on the colleges' or states' preferences given the minority share of the population at that point in time, then we can evaluate the program's effectiveness using the degree to which minority shares rebound to their prior levels.[4]

Kane (2000) finds that minority students are overrepresented among those who are in the top 10% of their high school class, but not in the top 10% of the national SAT distribution. In fact, he finds that over one-half of black and Hispanic students who are in the top 10% of their high school class are in the bottom 70% of the national SAT distribution. This result suggests that a top-$x\%$ policy that raises the admissions prospects for these high-class-rank, low-SAT students will increase the minority share of admitted students. Thus, we should expect a rebound in minority acceptances. The methodology used here will quantify the magnitude of this rebound.

This paper is a partial equilibrium analysis, which focuses on the change in the student's admissions, holding student behavior constant. For example, the simulation holds the students' applications constant. In reality, the removal of affirmative action may lead to minority students to shift their applications to lower-tiered institutions. By holding applications constant, this analysis shows how opportunities would change if students continued to behave as they did prior to the elimination of affirmative action. This paper likely understates the response once changes in applications are incorporated, and this response is estimated in Long (2004). The simulation does not allow for the effects that $x\%$ programs could have on high school students' effort and competitiveness.

Furthermore, this paper does not forecast changes in enrollment or persistence, but focuses on changes in the student's opportunity set. The paper does not estimate changes in the student's conditional enrollment decisions. For example, it is well known that elite black students are less likely to enroll conditional on admission, as these students are recruited by many institutions (Bowen and Bok, 1998; Conrad, 1999). The elimination of affirmative action could change these yield rates. Finally, this paper does not estimate changes in financial aid that could affect enrollment.

[4] As noted earlier, one needs to be careful when using minority share as a criterion of effectiveness when the minority share of the total state population is rising, as has been the case in Texas. In this condition, it is reasonable to believe that colleges' and/or states' preferences would adjust to the change in the population.

III. Data

Data are taken from the National Education Longitudinal Study (NELS). NELS sampled around 24 students from approximately 1,000 public and private eighth-grade schools throughout the United States.[5] Data on these students were collected in 1988, 1990, 1992, 1994, and 2000, beginning in the eighth grade. Nearly 15,000 students are available in the 1994 third follow-up. These data include high school transcripts, SAT and ACT scores, and demographic information. Additionally, the data include the first- and second-choice colleges to which the student applied and whether the student was accepted, as well as the college where the student enrolled.[6] Table 1 lists descriptive statistics for these data. Of the students in the third follow-up, 6,342 applied to a four-year college. The colleges where these students applied are ranked by the college's median freshman SAT and ACT scores (explained below). The score of the college could be determined for 6,247 of these students. For students with data on two applications, I randomly select one of these two applications to be used in the subsequent regressions. Of the remaining applicants, 22% have missing data on whether they were accepted to this college. Another 9% have missing data for the right-side variables that are used in the subsequent regressions. The sensitivity of the results to the missing data is tested.

Although it would be preferable to have information on all of the colleges where these students applied, NELS only provides information on the student's top two college choices. This limitation in the data is not as extreme as it might seem. I have estimated that 63% applied to only one or two schools and the average student submitted approximately 2.6 applications.[7] Nonetheless, for high-ability students, who tend to apply to more institutions, these data are less comprehensive.

Colleges are ranked by an index that combines the median SAT and median ACT of their freshman class using data from the Barron's Profiles of American Colleges

[5] The 1988 base year sample was constructed using a two-stage, stratified approach. In the first stage, schools were chosen on the basis of size and whether they were private or public. In the second stage, 24 students were randomly sampled and an additional two or three Hispanic and Asian-American students were added.

[6] Students were interviewed mostly during the months of January to March 1992. Of the applicants, 64% knew whether they were admitted or rejected by their first-choice college and 55% knew whether they were admitted by their second-choice college during this interview. The remaining admission and rejection answers were completed during the 1994 follow-up interview. I have found similar results in specifications that exclude those applications where the student knew his or her admission status at the time of the 1992 interview.

[7] The students were asked "To how many postsecondary schools have you applied?" and given the following choices: none, one, two to four, five or more. Of these students, 39% reported applying to only one college, and only 14% to more than four colleges. The estimates in the text are achieved by assuming a geometric distribution. Using earlier data from the National Longitudinal Study of 1972, Venti and Wise (1982) find that approximately 63% applied to only one school, 21% applied to two schools, and 16% applied to three or more.

TABLE 1.—NELS 1994 FOLLOW-UP, DESCRIPTIVE STATISTICS (UNWEIGHTED)

		Total	Asian and White (non-Hispanic) Students	Under-represented-Minority Students (*URM*)	Percentage *URM*
All students		14,915	10,875	4,040	27
Applied to a 4-year college		6,342	5,094	1,248	20
With data on acceptance to 4-year college*		4,967	4,032	935	19
With data on acceptance and all independent variables		4,403	3,607	796	18
4-year college application	Public college	2,987	2,414	573	19
	Private college	1,416	1,193	223	16
	Top quintile	1,127	998	129	11
	2nd quintile	988	853	135	14
	3rd quintile	902	756	146	16
	4th quintile	680	547	133	20
	5th quintile	706	453	253	36
Acceptance rates at 4-year college	Overall	83%	84%	79%	
	Top quintile	76%	76%	74%	
	2nd quintile	85%	85%	83%	
	3rd quintile	86%	87%	79%	
	4th quintile	86%	88%	77%	
	5th quintile	87%	90%	81%	
Average median freshman SAT score for best choice		1,023	1,034	977	
Average median freshman SAT score for second-best choice		974	986	922	
Percent who attended best college choice (of those who applied to a 4-year college)		40%	41%	35%	
Percent who attended best college choice (of those who were accepted by their best choice)		53%	53%	50%	

* For students with two reported applications, one application was chosen randomly.
The "best" college choice is the one with the highest median freshman SAT score.
Colleges are sorted by median freshman SAT score and placed in quintiles based on aggregate enrollment.

(1992).[8] For students who apply to more than one college, the student's *best* college is defined as the one with the highest score.[9] Note that under-represented minorities send a higher fraction of their applications to low-ranked schools. For example, table 1 shows that the average score of the *best* college for under-represented minorities is 977, compared to 1,034 for white and Asian-American students.

IV. Minority Advantage under Affirmative Action

Before simulating the rebound effect of the *x%* programs, it is first necessary to evaluate the magnitude of the preference given under affirmative action. A school's admissions policy can be thought of as a transformation of the student's application into a numerical rating of the applicant. For example, the University of Michigan (UM) explicitly awarded a certain number of points for the student's academic record, test scores, and other factors, including race/ethnicity. In the UM scoring system, belonging to an under-represented racial or ethnic minority added the equivalent of 1 point to the student's high school grade point average. Even after the Supreme Court's rulings, an implicit weighting scheme could be identified in each college's practices. The model that I develop in this paper will identify the average scoring system used nationally.

If the acceptance-rejection decisions of a national sample of colleges are regressed on a matrix of student, high school, and college characteristics, the coefficients that result from this regression can be thought of as the weights that the average college places on those characteristics. I estimate such a model where the college is assumed to place weights on the various factors that might be observable in the student's application. A college values these characteristics according to the following formula:

$$p_{ij}^{*} = x_i\beta + c_j\delta + z_{ij}\gamma + \varepsilon_{ij}, \quad (1)$$

where p_{ij}^{*} is the unobserved number of points given to applicant i for college j, x_i is a vector of student-specific characteristics, c_j is a vector of characteristics of the college, and z_{ij} is a vector of interactions of the student's and the college's characteristics.

The vector x includes the following student and high-school-level characteristics: dummy variables for under-represented minority (*URM*), female, top 10% in the student's high school class, advanced placement course taker,

[8] For some colleges, medians are estimated by the fractions of students who are within categorical ranges (for example, percentage with ACT score less than 21, 21 to 23, and so on). A small number of colleges are given the average score of schools in their Barron's selectivity tier. Of course, this is only one potential measure of college quality.

[9] These college scores ranged from a high of 1,400 (California Institute of Technology) to a low of 622 (Livingstone College, NC).

athlete, student government participant, parent with college experience, parents married, high-income or low-income family, private high school, and urban or rural high school; and grade point average, test scores, and number of other extracurricular activities.

The student's grade point average is computed for the core courses of English, math, science, and social studies. The student's test score variable is an average of the student's SAT and SAT-equivalent ACT scores. If the student did not take the SAT or ACT tests, the student's SAT-ACT index is imputed based on the student's standardized scores on math and reading tests taken in the eighth, tenth, and twelfth grades.[10] "Underrepresented minority" is defined to include Hispanics, blacks, and Native Americans.[11] In an alternative specification, the *URM* dummy is replaced with separate dummies for each race/ethnicity group, excluding whites. Parent's college experience is included because the college may give a preference to admitting the children of their graduates ("legacies") and the parent's college experience might be correlated with unobservable characteristics of their child. Finally, parents' income is included in the specification because some colleges do not maintain need-blind admissions and others give a preference to low-income students.

Different types of colleges will give students with the same vector x a different number of points. For example, a high-quality college will rate a student lower than a low-quality college. The vector c contains the score of the college as measured by the median SAT scores of their freshman students and a dummy variable for private colleges and universities. The vector z includes a dummy variable for in-state applicants, and this is interacted with the private college dummy. In some specifications, z will include interactions of each of the other regressors with the college's score and score squared. This latter specification is preferred, as colleges of various scores will give different amounts of weight to each characteristic of the applicant.

A student's probability of acceptance rises with his number of points, p^*_{ij}. Assume that p^* is normalized so that students with $p^* > 0$ are accepted. Further assuming that the error term ε is distributed normally with mean 0 and variance 1 yields the probit model. The probability of admission, a, is given by the following:

$$\Pr(a_{ij} = 1) = \text{Prob}[p^*_{ij} > 0] = \Phi[x_i\beta + c_j\delta + z_{ij}\gamma], \quad (2)$$

where Φ is the standard normal distribution.

One might be concerned that omitted variables could bias the results. For example, it could be that the essays and recommendations of minorities are better or worse than other observably similar students. Admissions officers could be admitting students whose essays reflect achievement in the face of adversity, and this characteristic could be correlated with race. If this is the case, the coefficients may over- or understate the degree of race-based preferences (Kane, 1998). Similarly, if there are other criteria that colleges use to rate their applicants and they are correlated with race, then the finding of a race preference will be spurious. It is hoped that the inclusion of the various elements in the vector x will minimize this effect. Also, there is a general perception that the SAT and ACT tests are biased against minority students. In response, college administrators may inflate minority test scores to remove the perceived bias. To the extent that this is done, the effect would appear to be a preference given to minority applicants where none is given from the perspective of the college admissions committee. However, a ban on affirmative action policies would take this discretion away from the college administrators.

The simulations assume that the coefficients in equation (2) reflect the true preference given to under-represented minority applicants. It is assumed that colleges will respond to a ban on affirmative action by setting the preference weight on *URM* (and the interaction of *URM* with other variables) to 0 while not changing any other element of their scoring system. For the second part of the experiment, an $x\%$ program will be instituted where automatic admission (that is, $a_{ij} = 1$) will be given for all public college applicants who are in the top $x\%$ of their high school class. All other students will be processed through the regular admission system.

A. Regression Results

In results not shown, I find no significant difference between the preferences given to black and Hispanic students; both receive a significantly higher chance of being accepted than white students with similar characteristics. Further, there is no evidence of a significant difference between white and Asian-American students.[12] Thus, in the reported results, I focus on the effect of being in an under-represented minority relative to white and Asian-American students.

Table 2 displays the regression results. The first panel lists the results of the regression without interactions of the regressors with score and score squared, and the second panel lists the fully interacted results. This and all subsequent regressions are weighted, and Huber-White standard errors are used to take account of correlation in errors of applications at particular universities.[13]

[10] Of the 6,342 NELS students who applied to a four-year college, 4,654 had an SAT or ACT score.

[11] For the remainder of the paper, the white, black, Asian-American, and Native American race/ethnicity groups are defined to be exclusive of Hispanic students.

[12] Using the specification in the second panel of table 2, I find insignificant differences between black and Hispanic students' intercepts and slopes. That is, the preference rises for these students by college test scores at similar rates. The intercept and slope differences for whites and Asian-Americans are also insignificant.

[13] The regressions are weighted by the NELS variable *f3f2pnwt*, which scales the 1994 NELS students to the national population of 1992 high school students.

TABLE 2.—DETERMINANTS OF ADMISSION TO FOUR-YEAR COLLEGE

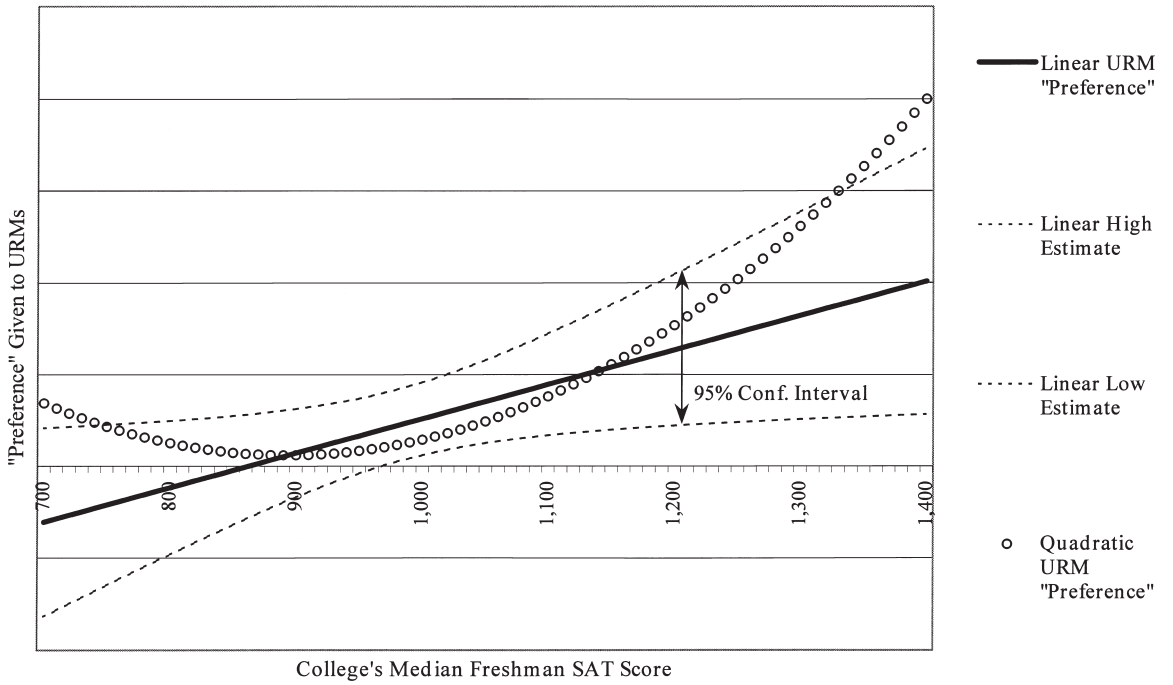
					Each Variable Interacted with Score and Score Squared					
	Variable k	Coefficient (Robust S.E.)	dF/dx (Robust S.E.)		Variable		Variable × *Score*		Variable × *Score*^{2}	
Student's race/ ethnicity	*URM*	0.13	2.5%		−1.62	*	0.19	**	Dropped	Insig.
		(0.10)	(1.8%)		(0.85)		(0.09)			
Student's academic characteristics	Top-10% h.s.	0.01	0.2%		−10.94		1.82		−0.07	
		(0.13)	(2.6%)		(7.08)		(1.34)		(0.06)	
	GPA (Core Courses)	0.65	12.6%	***	1.52		−0.07		0.00	
		(0.07)	(1.5%)		(4.45)		(0.87)		(0.04)	
	SAT-ACT Index (100s)	0.13	2.6%	***	0.23		−0.02		0.00	
		(0.02)	(0.4%)		(0.92)		(0.18)		(0.01)	
	A.P. Class	0.14	2.8%	*	−0.59		−0.01		0.01	
		(0.08)	(1.5%)		(4.60)		(0.91)		(0.04)	
Student's other characteristics	Female	−0.14	−2.6%	*	−0.59		0.18		−0.01	
		(0.08)	(1.5%)		(3.42)		(0.66)		(0.03)	
	H.s. athlete	−0.13	−2.5%		−4.67		0.97		−0.05	
		(0.08)	(1.5%)		(4.48)		(0.87)		(0.04)	
	H.s. government	0.27	4.9%	***	4.85		−0.81		0.04	
		(0.08)	(1.3%)		(3.72)		(0.71)		(0.03)	
	Other extracurriculars	0.00	0.1%		−1.00		0.19		−0.01	
		(0.01)	(0.3%)		(0.65)		(0.13)		(0.01)	
	Income >$75,000	0.12	2.3%		3.13		−0.67		0.04	
		(0.09)	(1.5%)		(4.84)		(0.91)		(0.04)	
	Income <$25,000	0.08	1.5%		−7.49		1.65	*	−0.09	*
		(0.09)	(1.7%)		(5.02)		(0.99)		(0.05)	
	Parent attended college	0.14	2.8%	*	−1.31		0.25		−0.01	
		(0.08)	(1.6%)		(5.15)		(1.02)		(0.05)	
	Parents married	−0.03	−0.6%		−6.52		1.30		−0.06	
		(0.12)	(2.2%)		(4.73)		(0.90)		(0.04)	
	Private h.s.	0.25	4.3%	**	17.24	***	−3.24	***	0.15	***
		(0.11)	(1.7%)		(5.77)		(1.10)		(0.05)	
	Suburban h.s.	0.18	3.5%	*	6.42		−1.14		0.05	
		(0.10)	(2.0%)		(4.63)		(0.88)		(0.04)	
	Rural h.s.	0.33	5.9%	***	11.07	**	−2.06	*	0.10	*
		(0.12)	(2.0%)		(5.48)		(1.07)		(0.05)	
	Missing h.s. location	−0.21	−4.6%		−3.63		0.95		−0.06	
		(0.23)	(5.4%)		(7.85)		(1.53)		(0.07)	
College characteristics	College's median SAT-ACT (100s)	−0.49	−9.5%	***						
		(0.04)	(0.8%)							
	Private college	0.17	3.2%		0.64		−0.17		0.01	
		(0.13)	(2.4%)		(6.30)		(1.21)		(0.06)	
Student and college	In-state student	0.30	6.4%	***	8.22		−1.81		0.10	*
		(0.10)	(2.3%)		(5.98)		(1.16)		(0.06)	
	In-state, priv. college	−0.15	−3.2%		−10.32		2.13		−0.11	
		(0.16)	(3.6%)		(8.18)		(1.58)		(0.08)	
	Constant	2.52		***	−3.13		0.52		−0.04	
		(0.46)			(10.81)		(2.12)		(0.10)	
	Pseudo R^2	0.20			0.23					

Probit regression, weighted by *f3f2pnwt*, which scales the 1994 NELS students to the national population of 1992 high school students.
Dependent variable equals 1 if accepted at four-year college.
Number of observations = 4,403.
Significance: *** if Pr ≤ 1%, ** if Pr ≤ 5%, * if Pr ≤ 10%.
Data: NELS 1994 Follow-Up.

The significant coefficients in the noninteracted results generally have the expected effects. High grade point average, high test scores, participating in high school student government, attending a private or rural high school, and being an in-state student all significantly increase the student's likelihood of acceptance. The chances of acceptance fall as the college's median freshman test score rises. Interestingly, female applicants have a lower likelihood of acceptance. Overall, the effect of being an under-represented minority student is positive, but insignificant (p-value 0.194). For the average student, being in an under-represented minority would raise the probability of acceptance by 2.5 percentage points. This is the equivalent of a 101-point increase on the SAT or a 0.21-point increase in grade point average. However, this is the overall effect, which may vary by college selectivity.

The results in the second panel allow the effect to vary by college score and score squared. I have not included $URM \times Score^2$ in the reported results, as this variable is not significant. In the reported results, the coefficient on

FIGURE 1.—"PREFERENCE" GIVEN TO UNDERREPRESENTED MINORITIES BY COLLEGE'S MEDIAN FRESHMAN SAT SCORE



URM × *Score* is significant and positive, indicating that affirmative action preferences rise with college selectivity. When I include *URM* × *Score*^{2} in the specification, the coefficients (robust standard errors) are the following: *URM* = 6.11 (5.09), *URM* × *Score* = −1.35 (1.00), and *URM* × *Score*^{2} = 0.076 (0.048). Figure 1 is a plot of probit coefficients that shows the effect of being an under-represented-minority student by score, using both the linear and quadratic specifications. Also plotted in figure 1 is the 95% confidence interval for the linear specification.

There are several important details to notice. First, for the linear specification, the *URM* preference becomes positive above *Score* = *862,* and significantly so after *Score* = 967. This result indicates that affirmative action is significantly used by around 39% of 4-year colleges, which are attended by around 45% of college enrollees.[14] Second, the preferences implied by the quadratic specification are mostly contained within the 95% confidence interval, except for those few colleges at the extremes. For most of the subsequent analysis, I will use the linear specification. The quadratic specification is used as a robustness check.

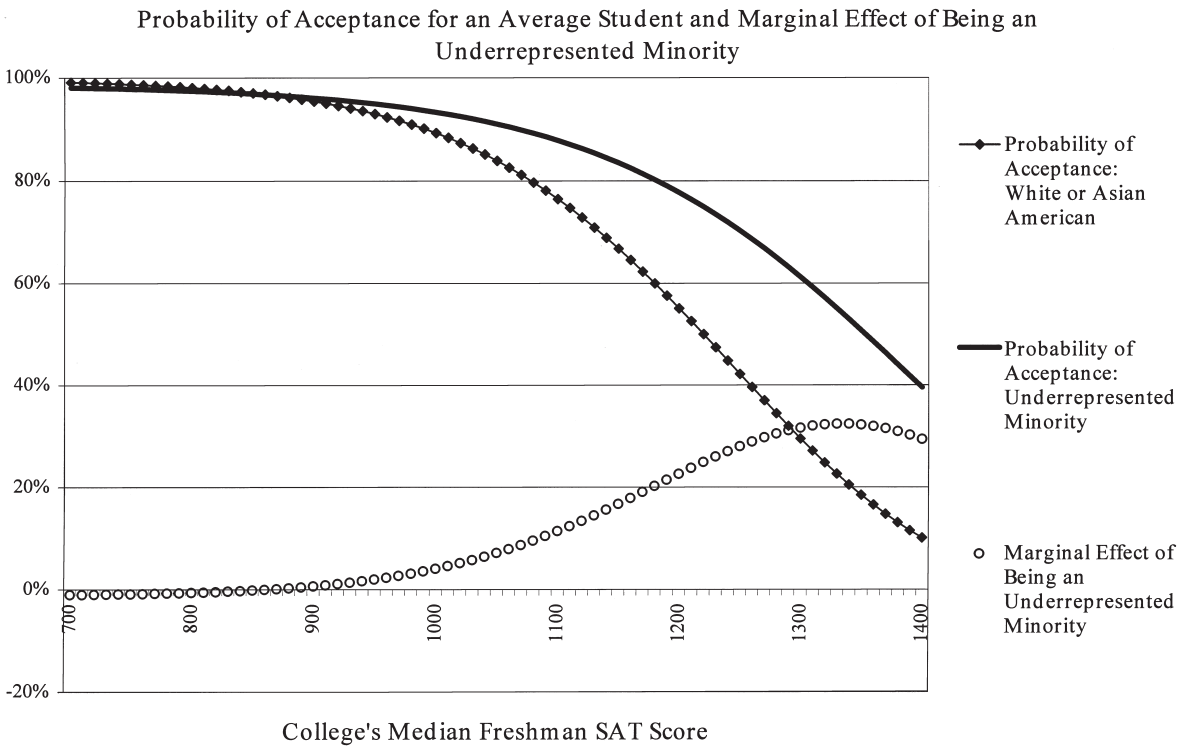
The marginal effects implied by the linear specification are quite large for the more selective colleges. In figure 2, I present the probability of acceptance for an average student and the marginal effect of being in an under-represented minority by college score. The marginal effect is calculated as the difference between the probability of acceptance for under-represented minorities and that for whites and Asian-Americans. As this figure shows, the marginal effect rises at an increasing rate over most of the distribution and peaks at 32 percentage points for *Score* = 1,330. This figure is computed using the characteristics of the average applicant. However, this may give an incorrect impression when we are discussing preferences at the more selective colleges, which receive applications from higher-quality students. Using the average characteristics of students who apply to top-quintile colleges, the marginal effect rises rapidly across the college score distribution, peaks at 39 percentage points for *Score* = 1,400, and is 15 percentage points for *Score* = 1,226 (the average quality of the colleges applied to by these students).

To estimate the effect of eliminating affirmative action, I set the coefficients on *URM* and *URM* × *Score* to 0. This procedure assumes that the colleges would keep their weights on all of the other factors unchanged, but would simply eliminate the advantage given to under-represented minorities.[15] In table 3, I compute the under-represented minority share of students who would be accepted. For this analysis, I use only one application per student. In section IV B, I will focus on the effect on the student's application

[14] There are no comprehensive listings of which colleges use affirmative action. A survey in the mid-1980s found that 41% of private and 46% of public colleges reported giving some preference to minority students in admissions (Klitgaard, 1985). Using data from the early 1980s, Kane (1998) finds significant preferences used by only the top two quintiles (and substantial preferences only at the top quintile). In previous versions of this paper, I have found similar results for the NELS data when colleges are broken into quintiles following his methodology.

[15] This procedure also assumes that the colleges would fill the newly available slots with students whose racial composition matches the composition of the students who maintain their enrollment. If these newly available slots are filled by students who are disproportionately minority, then this procedure will slightly overestimate the effect.

FIGURE 2.—PROBABILITY OF ACCEPTANCE FOR AN AVERAGE STUDENT AND MARGINAL EFFECT OF BEING IN AN UNDERREPRESENTED MINORITY



portfolio. The first column shows the predicted initial under-represented-minority share of accepted students with affirmative action. The results imply that eliminating affirmative action admissions at all colleges would reduce the number of under-represented-minority students who are accepted at this one college by 4.1%. For the most elite colleges (that is, colleges in the top decile) the elimination of affirmative action would reduce the number of such students who are accepted by 27%, as their share at these colleges would fall from 10.6% to 7.8%. It is important to note that these results pool campuses that used affirmative action with those that did not. Thus, the effects will be larger at colleges that use affirmative action.

These results are consistent, in general, with prior research, which has found that large preferences are given, particularly by elite institutions. For example, Bowen and Bok (1998) use a data set with admissions records of highly selective colleges (with an average score of approximately 1,229). For a subsample of five colleges in these data, they find that under a race-neutral policy, the probability of admission for black applicants would fall from 42% to 13%, a marginal effect of 29 percentage points.[16] They note that the actual experience at UC Berkeley was similar. In 1997, when race-sensitive admissions were used at UC Berkeley, admission rates were 48.5% for blacks. In the following year, the admissions rates for blacks fell to 15.6%.

[16] The five colleges in their analysis were a subsample of the colleges in the College and Beyond (C&B) database. The colleges included in C&B are all highly selective and are likely to use a greater degree of affirmative action than the average top-quintile college.

Kane (1998) finds similar although smaller results for admissions in the early 1980s. He uses the approach that is taken in this paper, estimating the magnitude of affirmative action by regressing the college's acceptance-rejection decision on the student's characteristics, including race. He finds that college admission rates for blacks, controlling for high school grades, SAT test scores, and personal characteristics, are substantially higher only for the top quintile of colleges. The magnitude of this preference is fairly large; black applicants receive a preference that is equivalent to an increase of two-thirds of a point in high school grade point average or 400 points on the SAT at top-quintile colleges. Kane (1998, 2000) finds marginal effects at top-quintile colleges of 10.3 and 8.6 percentage points for black and Hispanic students, respectively, in the High School and Beyond data, and 10.0 percentage points for black and Hispanic students in the NELS data. When I follow a similar methodology (restricting the sample to top-quintile students, dropping *Score* interactions, and estimating one level of affirmative action for under-represented minorities), I also find a marginal effect of 10.3 percentage points.

However, the literature is not uniform on this finding. Based on their study of 1972 high school students, Venti and Wise (1982) find a positive but insignificant preference for minority applicants. Using debatable exclusion restrictions, they simultaneously estimate the student's application decisions and the college's acceptance decision. They argue that these decisions may need to be evaluated simultaneously to control for selection effects that could bias the coefficients in the admission regression. For example, suppose a student

TABLE 3.—UNDER-REPRESENTED-MINORITY SHARE OF STUDENTS ACCEPTED WITH AND WITHOUT AFFIRMATIVE ACTION (USING ONE APPLICATION FOR EACH STUDENT)

College Type	College Quality	Share (%)		
			Without Affirmative Action	
		Initial	At Public Colleges	At All Colleges
All	All	16.1	15.8	15.5
Public	All	16.5	16.0	16.0
Private	All	15.2	15.2	14.3
All	Top decile	10.6	9.7	7.8
	2nd decile	9.6	9.0	8.7
All	2nd quintile	12.3	11.5	11.3
	3rd quintile	13.7	13.3	13.1
	4th quintile	16.6	16.4	16.4
	5th quintile	31.6	31.9	32.0

has an unobservable variable that increases her likelihood of applying to a top-tier college and increases her likelihood of acceptance. If this unobservable variable is correlated with the student's race, it will bias the findings of a study that ignores the selection effect. However, the potential direction of this bias is not obvious. In section IV C, I show that selection effects do not substantially change the findings.

B. *Additional Tests of Heterogeneity in the Degree of Affirmative Action in Admissions*

The results so far have not allowed for differences between the degrees of race-based preference used by public and private colleges. I test for such a difference by interacting *URM* and *URM* × *Score* with private college. I do not find significant differences.[17]

Additionally, I test whether there is heterogeneity in race-based preferences as a function of the student's academic ability. Are race-based preferences only given to strong candidates, or are they predominately given to weaker ones? To answer this question, I include interactions of *URM* with the student's SAT-ACT index, core grade point average, and NELS-administered test scores. In none of these specifications are these interaction terms significant.[18] Therefore, no evidence exists to show heterogeneity in the degree of preference given as a function of the students' academic quality.

C. *Do Selection Effects Drive the Results?*

Selection could affect the results in several ways. First, students select the quality of the colleges where they apply, rather than submitting their applications randomly. Second, students who choose not to apply are omitted from the regressions. Third, students whose applications are missing data on the admission-rejection decision of the college or on right-side variables are omitted.

Typically, an instrument is used to predict the first-stage selection decision to control for selection effects. However, it is difficult to find variables that predict the student's application decision that do not also affect the college's acceptance-rejection decision. As an alternative, I evaluate the direction and importance of each potential bias. In general, I find that the selection effects are likely to be small and perhaps lead to an underestimate of the degree of affirmative action.

First, consider the student's choice of the quality of the college to which he applies. If there is an omitted variable that is correlated with the decision to apply to a high-quality college, the college's admission decision, and the student's race, then one may observe a positive preference given to race that is spurious. In effect, there is reason for concern that top-quintile colleges are only receiving applications from those under-represented minority students who are unobservably better than the white and Asian-American students who apply to the same college. To test whether this is a matter of concern, I regress the score of the student's best college on the elements in the vector x:

$$q_i = x_i\omega + \varepsilon_{3i}, \tag{3}$$

where q is the score of the student's best college.

Suppose that, controlling for academic and other characteristics, under-represented minority students are predicted to apply to lower-quality colleges. Then, when one observes two students who apply to the same college who only differ in race, one would be concerned that the minority student might have an unobserved characteristic that enhanced her likelihood of applying and might enhance the college's decision to accept the student. However, the results of this regression demonstrate no significant difference between under-represented minorities and otherwise similar whites or Asian-Americans.[19]

A similar technique is applied to the application decision. The probability that a student will apply to a four-year college is predicted as a function of x:

$$\Pr(b_i = 1) = \Phi[x_i\lambda], \tag{4}$$

where b is a dummy variable indicating whether the student applied to a 4-year college.

[17] Using the interacted specification in the second panel of table 2, the intercept difference between private colleges and public colleges is negative (p-value 0.14), and the slope difference is positive (p-value 0.12).

[18] For this specification, I did not interact these variables with college score. Their t-statistics are the following: −1.01 for *URM* × *GPA*, +1.52 for *URM* × *SAT*, and +0.97 for *URM* × *NELS Test*.

[19] Under-represented minorities are predicted to apply to a college that is 6.3 points lower (t-statistic 0.98). However, there appears to be some heterogeneity between racial and ethnic groups. Hispanics and Asian-Americans are predicted to apply to colleges that have a median freshman SAT score that is 17 and 35 points higher, respectively, than the colleges to which white students apply. Blacks are predicted to apply to colleges that have a median freshman SAT score that is 19 points lower than the colleges to which white students apply. These three coefficients are each statistically significant at the 10% level. However, these differences in q are small relative to the standard deviation in q, which is 122.

Using the same logic as above, one should be concerned if under-represented minority students have a lower probability of applying controlling for academic and other factors. If this is true, then the under-represented minorities who do apply may have an unobserved characteristic that enhanced their likelihood of applying and may enhance the college's decision to accept the student.

However, the results of this regression demonstrate the opposite pattern. Under-represented minorities are, ceteris paribus, significantly more likely to apply to college.[20] For the average student, being in an under-represented minority raises the probability of applying by 9 percentage points. Therefore, if anything, one might be concerned that the previous results *underestimate* the magnitude of affirmative action in admissions. That is, because under-represented-minority students are more likely to apply to 4-year colleges ceteris paribus, we should be concerned that the white students who apply may have an unobservable characteristic that enhances their likelihood of admission and hides the degree of actual affirmative action preference.

Finally, the probability of having missing data, which eliminates the student from the regression, is predicted as a function of x (excluding grade point average and the SAT-ACT test score index, as these right-side variables may be missing). The results show that being in an under-represented minority significantly increases the likelihood of having missing data. For the average student, being in an under-represented minority raises the probability of having missing data by 6 percentage points. However, it is unclear in which direction missing data would bias the results. Furthermore, under-represented minorities are not more likely to have missing left-side data.

As a final test of the selection effects, I employ a Heckman two-stage probit regression. The first stage predicts the likelihood of being observed in the second-stage; the second stage predicts the likelihood of acceptance controlling for the combined selection effects. Students are observed in the second stage if they applied to a 4-year college and have no missing data. The first-stage regression uses x as the predictor of being observed in the second stage. Thus, the results of this two-stage model will not be able to separate selection effects from nonlinearities in the admissions equation. This strong functional-form assumption limits the strength of these findings. However, the results show nearly virtually no change in the coefficients on under-represented minority [$URM = -1.61$ (0.84), $URM \times Score = 0.19$ (0.08)]. In the remainder of the paper, where I simulate affirmative action, I use the results presented in the second panel of table 2, which ignore selection effects.

[20] Controlling for academic and other factors, blacks and Asian-Americans are significantly more likely than white students to apply to college. There is no significant difference for Hispanic students.

D. *Simulation of the Effect of Eliminating Affirmative Action on the Student's College Portfolio*

Whereas the prior analysis has demonstrated the effect of affirmative action on each application, we are ultimately interested in the effect on the quality of the best college available to the student. To evaluate this effect, I first predict whether students will be accepted at their best college and whether they will be accepted at their second-best college. I assume that all students who apply to college are accepted by a school of some quality. If a student is predicted to be rejected by the two colleges in the NELS data, I estimate the score of a *third-best* college using the previously estimated parameters and setting the probability of acceptance to 90%. That is, this third-best college represents an option that is available to the student with near-certainty.[21] I then estimate the score of the best college where the student will be accepted as the following:

$$\begin{aligned}\text{Predicted score} &= \Pr(\text{best}) \times [\text{score of best college}] \\ &\quad + [1 - \Pr(\text{best})] \times \Pr(\text{second-best}) \\ &\quad \times [\text{score of second-best college}] \\ &\quad + [1 - \Pr(\text{best})] \times [1 - \Pr(\text{second-best})] \\ &\quad \times [\text{score of third-best college}],\end{aligned} \tag{5}$$

where Pr( ) is the predicted probability of being accepted at the respective college.[22] For the average student who applied to two schools, $[1 - \Pr(\text{best})] \times [1 - \Pr(\text{second-best})]$ equals 4.3% with affirmative action and 4.7% without affirmative action. Thus, the effect of this hypothetical third-best school on the student's predicted college score is small. Further, this result should give us an indication that the elimination of affirmative action may not have large adverse effects on the students' placements. As shown in table 1, the acceptance rate for applicants to top-quintile colleges is 76%. Thus, even if rejected by the students' best choices, they are very likely to be accepted by their second-best choices, which are not substantially worse.[23]

Though the recent Supreme Court decisions make a universal ban on affirmative action unlikely in the near future, I nonetheless simulate the effects of a total ban that applies to both public and private 4-year colleges. This estimate will give the upper-limit effect. Thus, I reestimate

[21] The score of the third-best college is given a lower limit of 622 and an upper limit of the score of the second-best college. For this calculation, I assume that this third-best college is an in-state, public college.

[22] It is assumed that the admissions decisions of each college are conducted independently.

[23] Given these high probabilities of acceptance, minority students could have potentially found themselves placed in higher-quality institutions if they had only applied. Clearly something is limiting this ambition. Perhaps concerns regarding their own ability to succeed in these environments or lack of good counseling could be the cause.

TABLE 4.—DISTRIBUTION OF STUDENTS IN THE TOP 10% OF THEIR HIGH SCHOOL CLASS

	Percentage in the Top 10% of Their High School		Share of Total (%)		
	All High School Graduates	Students Who Applied to an In-state, Public, 4-Year College	High School Graduates	Qualifiers among High School Graduates	Qualifiers among Students Who Applied to an In-state, Public, 4-Year College
Asian-American	19	34	4	7	10
White (non-Hispanic)	11	16	71	77	72
Hispanic	8	19	11	9	9
Black (non-Hispanic)	5	12	13	7	9
Underrepresented Minority	7	14	25	16	18
Female	12	19	49	60	60
Male	8	15	51	40	40
Total	10	17	100	100	100

American Indian and race-missing students are not shown, due to low sample sizes.

the predicted score with the race-based preference set to 0 for all colleges.

The results of this exercise show that black and Hispanic students would be shifted into colleges with slightly lower-quality students. Initially, the predicted college score for an average student is 994. For black and Hispanic students, this predicted college score is much lower; 911 and 962, respectively. For under-represented minorities as a group the predicted score is 935, which is 71 points (or 0.57 standard deviations) lower than the predicted score for the average white or Asian-American student. This gap would slightly increase to 81 points (or 0.65 standard deviations) if race-based preferences were eliminated at all colleges.[24] Thus, though a universal ban on affirmative action at all institutions would have an adverse effect on minorities, the magnitude of the shift in the distribution is small relative to the initial difference between the groups. In essence, if the elimination of affirmative action displaces minority students from their best choice, they are very likely to be accepted by their second-best choice, which is not much worse than their best choice. Nonetheless, such a movement is a step in the wrong direction and exacerbates the large initial gap.

V. Simulation of an *x*% Policy

Next, I examine how the newly implemented *x*% systems may work using data on NELS students. To simulate the effect, I initially assume that the new policy grants admission to all public colleges for in-state students who are in the top 10% of their high school class.[25] First, note that if high schools were completely segregated, then the distribution of students by race/ethnicity in the top 10% of their high school class would match the distribution of students by race/ethnicity in the general population. That is, one would observe that 10% of whites qualify as well as 10% of blacks, and so on. However, high schools are not completely segregated, and the distribution of students in the top 10% does not match the distribution in the general population. This result is shown in table 4. Of Asian-American students, 19% are in the top 10% of their high school graduating class, whereas only 5% of black students would qualify under the new policy. Of course, the current policies are only applicable to students who apply to in-state, public, 4-year colleges.[26] Overall, 17% of these applicants are in the top 10% of their classes. However, this fraction is not constant across race/ethnicity groups. Asian-American students again lead with 34% qualifying, and black students trail with 12% qualifying. Second, note that the qualifiers are disproportionately (60%) female.

However, it may be the case that the new policy helps under-represented minorities gain the admission they lost after the elimination of affirmative action. To test this hypothesis, I first predict the share accepted under the old system (again, using one randomly selected application). I then drop race-based preferences by setting the coefficients on *URM* and *URM* × *Score* to 0 and reestimate the share accepted. Finally, for students who are in the top 10% of their high school and apply to an in-state public college, I set the probability of admission to 1 and reestimate the share

[24] There are two feedback effects that have not been incorporated. First, I have not changed the likelihood of admissions of white and Asian-American students. Furthermore, I am assuming that each college's median SAT score stays unchanged after the policy change. As marginal under-represented minority students are rejected from higher-tiered colleges, these colleges' median SAT scores would likely rise. This effect would likely raise the average score of colleges attended by white and Asian-American students. Likewise, as these newly rejected students moved to lower-tier colleges, one could observe changes in the median SAT score of these schools. In results not shown, these feedback effects are found to be very small.

[25] The systems in Texas, California, and Florida do not grant this automatic admission to out-of-state students. The systems in Florida and California only guarantee admission to *one* of their public universities. Also, note that I have tested the sensitivity of the results to alternative thresholds (including the top 4% and top 20%). These results are discussed later in this article.

[26] Of high school graduates in NELS, 48% apply to a 4-year college. Of these, 66% sent one of their two applications to an in-state, 4-year, public college.

TABLE 5.—EFFECT OF REPLACING AFFIRMATIVE ACTION WITH A TOP-10% PROGRAM AT PUBLIC AND AT ALL COLLEGES

			Percentage				
				Without Affirmative Action			
			With A.A.	At Public Colleges		At All Colleges	
	College Type	College Quality	Regular Admission	Regular Admission	Regular and Top 10%	Regular Admission	Regular and Top 10%
URM share	All	All	16.1	15.8	15.9	15.5	15.6
	Public	All	16.5	16.0	16.1	16.0	16.1
	Private	All	15.2	15.2	15.2	14.3	14.4
	All	Top decile	10.6	9.7	10.1	7.8	8.8
	All	2nd decile	9.6	9.0	9.1	8.7	8.8
	All	2nd quintile	12.3	11.5	11.6	11.3	11.3
Bounce back	All	All			26		18
	Public	All			25		25
	Private	All			—		12
	All	Top decile			43		38
	All	2nd decile			16		18
	All	2nd quintile			10		8

accepted. When I apply the policy to private colleges, I drop the in-state requirement, as these colleges are less likely to require students to be from the same state to qualify.

The major finding of this simulation is that the top-10% policy does little to bring the share of under-represented minorities back to its initial level. The results are presented in table 5. The middle panel shows the effects when the policy changes only affect public colleges, and the third panel shows the effects when all colleges are affected. After dropping affirmative action at public colleges, the share of under-represented students among students accepted falls from 16.13% to 15.76%. This share rises only to 15.85% after adding the new qualification mechanism. This rebound represents a gain back of only one-quarter of the share that is lost. The rebound is higher when we focus on top-decile colleges, which granted the highest degree of affirmative action. For these schools, the rebound is 43%.[27] The new admissions policy still leaves the number of accepted under-represented minorities substantially below its prior level for these elite colleges. Further, even these limited results only hold if the top-x% policy allows qualifiers to enter every public college in the state. The programs in Florida and California only guarantee acceptance to *one* of their state universities. For example, students who qualify under California's top-4% program may gain access to the UC system, but still be denied admission by top-tier campuses such as UC Berkeley. If affirmative action were eliminated in both public and private colleges, the under-represented-minority share at top-decile colleges would fall from 10.6% to 7.8%. With the institution of a top-10% program, the minority share at these colleges would only rebound 38% to an 8.8% share. This 8.8% share represents a 17% decline in the number of under-represented-minority applicants accepted. In contrast, the white and Asian-American student share of accepted students rises from 89.4% to 91.2%, a 2% increase.

In general, top-x% programs have little effect, as their intended beneficiaries are very likely to be accepted at their best college choice without the aid of the automatic admission. Of the 4,898 students with data on their acceptance to their best college choice, only 68 would have had their admission status changed by a top-10% program, even if the policy were applied at both public and private colleges. This result is confirmed by data from students in Florida, which are discussed in section V B. Furthermore, this result holds for minority recipients as well. Most colleges will accept under-represented-minority students who are in the top 10% of their high school class, even without affirmative action. Without race-based preferences at public colleges, I estimate that the average under-represented-minority student who is in the top 10% of her high school class would have an 84% chance of being accepted by her best college choice.

Note that the effects of top-x% programs are sensitive to the choice of the threshold x. Under a top-4% rule, the effects are generally much smaller, particularly for public colleges, where the overall rebound is only 2%. A top-20% rule has comparable effects to the top-10% rule. Under this threshold, the overall rebound is 19% for all colleges and 24% when just applied to public colleges.

It is also interesting to evaluate how this policy change would affect the gender share and the regional share. Some have hypothesized that these new programs would enhance the share of female and rural students who are accepted. In results not shown, I find that the new policy will have very little effect on the female and rural shares. Note that rural students received a significant preference in admissions, and this preference is diluted by a top-x% policy.

[27] A sensitivity analysis was performed on this estimate using the quadratic specification. Using this specification, the rebound is predicted to be 23% overall and 38% at top-decile colleges. In a prior version of this paper, several other specifications were used. The x% policy was not predicted to restore the minority share produced by the traditional affirmative action admissions policies using any of these specifications.

A. *Does the Degree of High School Segregation Affect the Efficacy of an x% Policy?*

California, Texas, and Florida high schools are among the more segregated in the nation. These states rank 4th, 10th, and 19th for black segregation and 2nd, 3rd, and 7th for Hispanic segregation, respectively.[28] It may be that these states' *x%* programs will be more efficacious than those of states with lower degrees of segregation. To test this hypothesis, I rank students within each race/ethnicity group by their scores on a series of standardized tests given in the eighth, tenth, and twelfth grades. I then establish race-specific top-10% criteria. In effect, this race-specific cutpoint approximates the distribution of qualifiers that would occur if high schools were completely segregated, ceteris paribus. After performing this experiment, I find that Asian-American students would need an average test score of 66.2 to be among the top 10% of Asian-American students.[29] The required test score is 64.5, 57.2, and 55.6 for white, Hispanic, and black students, respectively. The effect of these race-specific criteria should increase the number of Hispanic and black students who automatically qualify and decrease the number of white and Asian-American students who qualify. Indeed this is the case. The under-represented minority share of those qualifiers who apply to a public in-state college would rise from 18% to 22% if high schools became completely segregated. As a result, the top-10% policy would have more effect in raising under-represented minority shares. However, the effect of segregation on the program's efficacy is very slight. For example, the predicted rebounds from a top-10% program applied to completely segregated high schools are 29% in all public colleges, 45% in top-decile public colleges, and 23% in second-decile colleges. These rebounds are only slightly higher than the results given the current degree of segregation (26%, 43%, and 16%, respectively). These results show that even under extreme segregation the *x%* program would not fully restore the minority share. Moreover, *x%* strategies will be somewhat less efficacious in maintaining minority enrollments in states with lower degrees of segregation.

B. *The Efficacy of Florida's Talented 20 Program in 2000*

Florida is the most recent state to offer a top-*x%* plan. Data from the first year of this policy confirm the findings using the NELS data. The Florida policy, named the Talented 20 program, guarantees admission to one of the state universities to students who graduate in the top 20% of their high school and meet certain course requirements. The first class to be affected by Florida's new policies entered college in the fall of 2000. Due to a court challenge, these students had been processed through the regular admission system with affirmative action in place. Talented 20 students were notified in the summer before their freshman year to reapply if they had been rejected.

I have obtained data from the Florida Board of Regents on this first cohort of students who qualified for automatic acceptance. These data include information on the public Florida colleges to which the student applied and whether the student was initially accepted. Altogether 22,519 students qualified for automatic admission under the Talented 20 program. These students were disproportionately female, white or Asian-American, and nonpoor: 65% were female, and 26% were in under-represented minorities, compared to 43% of Florida's 11th-grade students in 1998–1999. Of the qualified students 12% received a free or reduced-price lunch, compared to 28% of Florida's high school students.[30] These results support the findings for the NELS students.

In general, most of the Talented 20 students who applied to a public Florida institution were accepted under the old admission system, and rates of admission varied little by race. For example, 87% of Talented 20 applicants were accepted at the University of Florida, with a range from 85% for Hispanics to 95% for blacks. These rates of acceptances were even higher at less selective Florida institutions.

Florida's program does not provide automatic admission to any public Florida institution. Rather, it only provides a guarantee of admission to *one* of the ten schools in Florida's State University system. A student must still go through the regular admissions program. If the student is rejected at three or more schools, she is supposed to notify her high school counselor, who then negotiates with the state for a slot in one of the schools. Overall, 71% of the Talented 20 students applied at one or more of the ten Florida public institutions. Of those who applied to one or more of these institutions, 96% were accepted by at a least one.[31] Therefore, the new program can only affect the 4% who were denied by all of the Florida public colleges to which they applied. Finally, because the Talented 20 policy eliminates the ability of the University of Florida and Florida State University to use affirmative action, minority students will likely be shifted to less selective schools. In general, the guarantee of admission only grants these minority students access to colleges where they would have already been accepted.

VI. Conclusions

This paper has shown that race-based preferences existed for minority college applicants in 1992, and these preferences

[28] This ranking is based on the percentage of white students in a school attended by a typical black or Hispanic student for the 1996–1997 school year (Orfield and Yun, 1999).

[29] For all NELS students, the average test score is 49.7 with a standard deviation of 9.8.

[30] The characteristics of Florida's high school students are derived using data from the Common Core of Data, National Center for Education Statistics. Note that "high school" is defined here as any school with an 11th-grade student in the 1998–1999 school year.

[31] However, some of the minority students in the Talented 20 likely benefited from affirmative action admissions policies.

were large at top-tier institutions. Eliminating these preferences would shift minority students to less selective institutions. The establishment of a top-$x\%$ program would have only small effects on the access of minority students to top-tier institutions. There are not enough minority students in the top $x\%$ of American high schools for the program to substantially improve minority shares in top-tier colleges. The programs are particularly inefficacious when they include course requirements or when they limit the beneficiary's campus choice.

Further, because the average minority student has a lower chance of being admitted under this new policy, there may be an application response that heightens or dampens the adverse effects. If minority students respond to their lower likelihood of admission by submitting more applications, then the unfavorable effect may be mitigated. However, in a separate paper (Long, 2004), I find that this decline in admissions probability has led to a substantial negative application response, in both California and Texas, which then multiplies the admissions effect by further lowering minority enrollment shares at the most selective universities.

There have been no states that have implemented an $x\%$ program without first dropping their affirmative action policies. Thus, these $x\%$ programs appear to be devised, implicitly or explicitly, to ameliorate the adverse effects of the elimination of race-based preferences. Politically, these programs are attractive. By implementing the policy, politicians and legislators can appear to be sympathetic to concerns for equitable minority access. However, this paper finds that it is not currently possible for these programs to substantially affect the distribution of admitted students.

A nascent literature on class-based admissions systems (Conrad & Sharpe, 1996; Cancian, 1998; Kane, 1998) comes to similar pessimistic conclusions. Simply put, these programs are blunt instruments. Given the persistent gaps in test scores and other measures of academic preparedness between under-represented minorities and white and Asian-American students, affirmative action appears to be the only effective tool in maintaining minority enrollment in top-tier colleges.

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