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Winners and Losers: Changes in Texas University Admissions post-*Hopwood*

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Abstract

This paper evaluates changes in the racial and ethnic composition of admissions at three Texas universities following the judicial ban on affirmative action imposed by the 1996 *Hopwood* decision. We estimate the extent to which universities practiced affirmative action before the judicial ban, and evaluate how admission officers at these universities changed the relative weights accorded to various applicant characteristics during the ban. After assessing whether changes in the relative weights favored minority applicants, we simulate the degree to which these new policies succeeded in maintaining minority admission rates at their pre-*Hopwood* levels. We find that these universities complied with the *Hopwood* ruling such that direct advantages given to black and Hispanic applicants disappeared (and, in some cases, became disadvantages). While we find some evidence that universities changed the weights they placed on applicant characteristics aside from race and ethnicity in ways that aided underrepresented minority applicants, these changes in the admissions process were insufficient to fully restore black and Hispanic applicants' share of admitted students.

Keywords

College Affirmative Action

1. Introduction and Research Questions

During the past decade, several states have had affirmative action banned in their public university admissions, (including Texas, California, Florida, Washington, Georgia, and Michigan),¹ and ballot initiative efforts are being attempted in other states. In each of these states, the general public and policymakers have expressed concerns about maintaining minority enrollment in elite institutions.

In its July, 1996 *Hopwood*² decision, the Fifth Circuit Court of Appeals opined that the only legal justification for affirmative action is to rectify the present effects of past discrimination, concluding therefore, that the goal of achieving institutional diversity was not an acceptable rationale for considering race in admissions decisions. The Attorney General of Texas interpreted the *Hopwood* decision as a ban on race-based admissions, financial aid, and recruiting policies at public and private institutions in the state. This ban

¹The judicial bans in Texas and Georgia were effectively overturned by the Supreme Court's 2003 *Grutter v. Bollinger*, 539 U.S. 306 (2003)).

²*Hopwood v. Texas*, 78 F.3d 932(5th Cir.), cert. denied, 518 U.S. 1033 (1996).

was in-force for the fall class of 1997, which registered appreciable declines in the representation of minority students at the state's public flagship institutions.

Anticipating further declines in minority enrollment at public universities with selective admission policies, the Texas legislature passed H.B. 588, the "uniform admission law" (popularly known as the top 10% law), which guarantees admission to any public university in the state to Texas high school seniors who graduate in the top-10 percent of their class. Passed in May, 1997, the uniform admission law was fully in force for the fall of 1998 admission cohort. The uniform admission law also specified 18 factors that universities should consider in admitting students who do not graduate in the top-10% of their high school class, including socioeconomic status, second language ability, and indications that the student overcame adversity.³ Some have argued that under an affirmative action ban colleges will have an incentive to employ admissions practices that partially ignore an applicant's "quality," thereby placing more emphasis on characteristics that are correlated with race/ethnicity (Chan and Eyster, 2003). Among the criteria explicitly named in H.B. 588 for college admission are several non-traditional factors that could be used as proxies for race/ethnicity in order to achieve institutional diversity.

Whether a change from an explicit consideration of race to the use of proxy indicators of minority group status can effectively increase minority college admission rates, and whether the allowable proxies are as efficient as traditional race-sensitive admission criteria poses an empirical question with clear policy implications. Using unique administrative data from three Texas universities, this paper will answer the following questions. First, to what extent was affirmative action practiced in the admissions decisions of Texas universities before the *Hopwood* decision? Second, how did these universities change the weight they placed on various applicant characteristics and did compliance with the *Hopwood* decision reduce or eliminate the direct or indirect weight placed on an applicant's race/ethnicity? Finally, did these universities add weight to characteristics that are correlated with an applicant's race/ethnicity in ways that advantage underrepresented minority applicants? Assuming that the answer to the last question is "yes," we then conduct simulations that estimate the extent to which the policy responses were able to maintain minority students' share of admitted students.

We find evidence the Texas flagship public institutions (University of Texas at Austin and Texas A&M University) practiced affirmative action in the pre-*Hopwood* years. These universities complied with the *Hopwood* decision by eliminating the direct admission advantages given to minority applicants, but they also changed the weights placed on other applicant characteristics in ways the favored black and Hispanic applicants. However, these changes were not sufficient to restore minority representation to the level that would have occurred under the prior affirmative action policies.

³The characteristics listed in H.B. 588 included the following: "(1) the applicant's academic record; (2) the socioeconomic background of the applicant, including the percentage by which the applicant's family is above or below any recognized measure of poverty, the applicant's household income, and the applicant's parents' level of education; (3) whether the applicant would be the first generation of the applicant's family to attend or graduate from an institution of higher education; (4) whether the applicant has bilingual proficiency; (5) the financial status of the applicant's school district; (6) the performance level of the applicant's school as determined by the school accountability criteria used by the Texas Education Agency; (7) the applicant's responsibilities while attending school, including whether the applicant has been employed, whether the applicant has helped to raise children, or other similar factors; (8) the applicant's region of residence; (9) whether the applicant is a resident of a rural or urban area or a resident of a central city or suburban area in the state; (10) the applicant's performance on standardized tests; (11) the applicant's performance on standardized tests in comparison with that of other students from similar socioeconomic backgrounds; (12) whether the applicant attended any school while the school was under a court ordered desegregation plan; (13) the applicant's involvement in community activities; (14) the applicant's extracurricular activities; (15) the applicant's commitment to a particular field of study; (16) the applicant's personal interview; (17) the applicant's admission to a comparable accredited out of state institution; and (18) any other consideration the institution considers necessary to accomplish the institution's stated mission."

Our analyses are based on data from Texas universities, but the results have broader policy implications because the use of race-sensitive admission criteria in college admissions remains a highly controversial issue.⁴ Following judicial and legislative bans on affirmative action, public universities in California, Florida, and Washington have used various strategies to increase minority representation on their campuses, including percent plans and proxy indicators for race and ethnicity.

Three years after the passage of the California Civil Rights Initiative (Proposition 209) in 1996, which prohibited the explicit use of race, ethnicity, national origin, and sex in university admissions, the University of California Regents approved a policy that guarantees admission to one of the UC campuses to the top-4 percent of graduates in each California high school.⁵ The University of California System issued additional guidelines for admission: for 25 to 50 percent of the freshmen admissions, decisions could consider “(a)cademic accomplishments in light of the applicant’s life experiences and special circumstances. These experiences and circumstances may include, but are not limited to, disabilities, low family income, first generation to attend college, need to work, disadvantaged social or educational environment, difficult personal and family situations or circumstances, refugee status, or veteran status” (Univ. of California 1996). Since 1999, the University of California has adopted a series of reforms that increase the consideration of non-academic criteria and expanded its comprehensive review in the admissions process to all students (Chan and Eyster 2003; Univ. of California 2001a, 2001b). For example, in 2001, the class rank criterion was amended by the UC Regents to offer students who were not in the top-4 percent, but were in the top-12.5 percent of their high school class, admission to one of the UC-campuses if they successfully completed first- and second-year requirements at a community college.

Changes in admission criteria implemented in Florida and Washington also allow for the consideration of non-academic factors. Florida Governor Jeb Bush announced the “One Florida” policy in 1999, which simultaneously eliminated affirmative action in admissions and guaranteed admission to one of the state’s public universities to the top-20 percent of graduates in each Florida high school. Subsequently the University of Florida added an essay requirement to their application and in the application solicited information about students’ “...extracurricular activities, work history, whether they were raised by a single parent, etc.” (Marin and Lee 2003, 33). According to James (James 2002: A1), the University of Florida also gives special consideration to “...students who are poor, attended a low-performing high school, or whose parents didn’t attend college.”

With a 1998 ballot initiative (I-200) similar to California’s Proposition 209, voters in the state of Washington prohibited the use of race and ethnicity in college admissions. Concerned about the potential drop in minority enrollment as experienced in Texas and California following the ban on affirmative action, admission officers at the University of Washington also modified their college admissions policies and recruitment strategies. UW added essays and solicited additional information in their application materials that could be used to signal ethnic group membership (McCormick 2000). A broader survey of the efforts being attempted by these universities can be found in Long (2007a).

Given that efforts to use proxy indicators for race/ethnicity are being implemented at public universities in all of the states that have eliminated preferential admissions, the results in this

⁴The Michigan referendum (Proposition 2) banning affirmative action in college admissions (three years after the Supreme Court Decision allowed narrowly tailored consideration of race) attests to the continued salience of this issue for the general public.

⁵California’s automatic admission guarantee *only* kicks in if the student was not ranked high enough on a statewide academic index (based on standardized test scores, grades and class rank, among other factors) to guarantee admission to the UC system.

paper have national importance, as they are the first to show whether such efforts have succeeded in replacing traditional affirmative action in actual practice.⁶

2. Administrative Data

For this analysis, we use administrative records from three public Texas universities: University of Texas at Austin (UT), Texas A&M University (TAMU), and Texas Tech University (TTU). The time span of these records include several years before and after the judicial ban on affirmative action.⁷ Barron's Profiles of American Colleges (1996) classifies UT as Very Competitive, TAMU as Highly Competitive, and TTU as Competitive.⁸ In the years for which we have admissions data, the average SAT scores of admitted students were 1,233 at UT, 1,182 at TAMU, and 1,094 at TTU.⁹

The administrative records, which contain a wealth of information about the applicant pool, have been transformed to machine readable format, standardized to the extent feasible, and verified for consistency.¹⁰ While specific data elements vary across the universities, the student records for all of the universities include test scores (e.g., SAT/ACT), class rank percentile, and high school identifiers that allow us to append high school characteristics to the applicant records. Unfortunately, the data generally lack information about students' high school coursework and their admission essays. We take special note of these data limitations in interpreting the results, and provide a sensitivity analysis of the likely effects of omitted variable bias in the appendix.

3. Methods

Using a probit regression, the following equation is estimated for student i applying to college j in year t :

$$\Pr(\text{Admitted}_{ijt}=1)=\Phi(\beta_0+U_i\beta_{jt}+X_i\theta_{jt}+\varepsilon_{ijt}) \quad (1)$$

where U is a vector of race and ethnicity indicator variables, X is a vector of other applicant characteristics including measures of high school quality, and ε is a normally distributed error term.

Equation 1 is estimated separately for each college in each year. β_{jt} represents the added advantage (if any) given to racial and ethnic group applicants at college j in year t , controlling for other applicant characteristics. This method of identifying the degree of affirmative action in admissions has been used previously in several prior studies including Kane (1998a), Long (2004b, 2007b), and Espenshade, Chung, and Walling (2004). Because these studies were based on cohorts of applicants in years prior to the elimination of affirmative action, their results can only suggest how such a policy change would affect admissions decisions. Notably, prior studies could not simulate whether and how universities might shift the weights placed on other applicant attributes. Estimating Equation

⁶Long (2004b) predicts that replacing affirmative action with a top-x% program (like the top-10 percent policy in Texas) will not restore minority representation. However, Long's simulation results are based on pre-*Hopwood* data, and do not include any estimation of the institutional changes in other components of the admissions formulae.

⁷The administrative data are available for UT from 1990 to 2003, for TAMU from 1992 to 2002, and for TTU from 1991 to 2003.

⁸The empirical results for these institutions may provide insights into the policy responses of similarly selective institutions in other states. For comparison purposes, note that Barron's Profiles of American Colleges (1996) gives the following selectivity ratings: UC-Berkeley ("Highly Competitive +"), UCLA ("Highly Competitive"), University of Florida ("Highly Competitive"), Florida State University ("Very Competitive"), and the University of Washington ("Very Competitive").

⁹ACT test scores were converted into their equivalent SAT test score and included in these averages – see page 10 for further discussion.

¹⁰These data were compiled by the Texas Higher Education Opportunity Project as part of a multi-year assessment of college going behavior in Texas following the ban on affirmative action. Further information can be found at: <http://theop.princeton.edu/index.html>.

1 across successive cohorts of institution-specific applicants enables us to evaluate these policy responses directly. Specifically, three hypotheses are tested:

1. $\beta_{jt} > 0$ for black, Hispanic, and Native American applicants in the years prior to the *Hopwood* decision (i.e., the colleges practiced affirmative action in their admissions decisions.)
2. In the years prior to the *Hopwood* decision, β_{jt} is larger for the more selective colleges.
3. $\beta_{jt} = 0$ in the years after the *Hopwood* decision (i.e., the colleges did not practice affirmative action in their admissions decisions).¹¹

Additionally, we test whether the universities changed the weights placed on applicant characteristics in such a way as to favor underrepresented minority applicants. To conduct this test, we simulate the admissions decisions that would have occurred in the absence of the *Hopwood* decision and the top-10% policy. This counterfactual estimation begins by estimating Equation 1 using all applicants from the years 1996 and earlier.¹² We then apply the resulting parameter estimates to each applicant and estimate their probability of admission.¹³ A simulated class of admitted students is constructed by assuming that the university would accept the students with the highest probabilities of being accepted. We assume that university j would accept Z_{jt} students in year t , where Z_{jt} is set equal to the actual number of students accepted by university j in year t .¹⁴ We then compare the composition of the simulated class to the students actually accepted to infer the net effect of the *Hopwood* decision, the top-10% policy, and any other changes to the university's admissions system.

Next, we estimate the consequences on the ethno-racial composition of admitted students of the judicial ban on affirmative action resulting from *Hopwood* decision and the top-10% policy by holding the pre-*Hopwood* admission weights constant, but setting the race-ethnicity coefficients to zero and admitting all in-state applicants who are in the top-10% of their high school class. By comparing the resulting composition of this simulated admission class to that of students who were actually accepted, we can infer the net effects of the university shifting the weights placed on applicant characteristics. These simulations permit us to evaluate the effectiveness of the changing admission policies in restoring minority applicants' share of the admitted class that would have existed in the absence of the *Hopwood* ban and the top-10% policy.¹⁵

4. Applicant Characteristics

Before turning to the statistical results, this section discusses various details of the data and the definitions used for several applicant characteristics. In the admissions probit regressions, we use each piece of information that is available for at least 20% of the applicants to university j in year t . Race and ethnicity variables are taken as labeled by the

¹¹Note that lack of data on student's high school coursework and admissions essays could bias the estimates of β_{jt} if coursework and essay quality is correlated with the student's race/ethnicity. As such, we exercise caution in interpreting the coefficients.

¹²We add year of application dummy variables to the specification in Equation 1 to capture any year-to-year changes in the institution's degree of selectivity.

¹³Student i 's predicted probability of admission is set equal to $\Phi(\hat{\beta}_0 + U_i\hat{\beta}_{jt} + X_i\hat{\theta}_{jt} + \hat{\epsilon}_{ijt})$, where $\hat{\epsilon}_{ijt}$ is a randomly generated standard normal error term.

¹⁴This procedure implicitly assumes that the universities would opt to accept the same number of students under this counterfactual as they actually accepted. This assumption may not be correct if the yield rate (i.e., the share of admitted students who enroll) would be substantially altered by the change in the composition of admitted students. As we show in the appendix, the yield rates at these institutions were relatively constant.

¹⁵The 2003 Supreme Court *Grutter v. Bollinger*, 539 U.S. 306 (2003) invalidated *Hopwood*. However, our study period occurs before this change.

universities. The percentage of students with missing race/ethnicity is below 0.4 percent for each institution.¹⁶ We treat students with missing race/ethnicity as if they were white, which renders our estimates of policy effects conservative.¹⁷

ACT test scores were converted into their equivalent SAT test score values using a conversion table provided by the College Board (Dorans, 2002), and for students who took both tests we use the higher of the two scores.¹⁸ This conversion is valid for SAT scores after the College Board “re-centered” scores upwards in 1996, therefore we have re-centered prior years SAT scores prior to using this conversion.¹⁹

The statistical models include several variables to measure the type and quality of the applicants’ high school, namely whether the applicant’s high school was a private, a “feeder”, a “Longhorn”, and/or “Century” high school. “Feeder” high schools are defined as the top 20 high schools based on the absolute number of students admitted to UT-Austin and Texas A&M in the year 2000, which yields a combined pool of 28 campuses due to considerable overlap between the sets (Tienda and Niu, 2004, 2006a). “Longhorn” high schools are defined as those ever targeted by the University of Texas for the Longhorn Opportunity Scholarships (LOS) for students who qualify for the admission guarantee. According to UT’s Office of Student Financial Services (2005), “these schools were included based on criteria that takes into account their students’ historical under-representation, measured in terms of a significantly lower than average percentage of college entrance exams sent to The University by students from this particular school, and an average parental income of less than \$35,000.” “Century” high schools are the LOS counterparts at Texas A&M, namely campuses ever targeted for Century Scholarships for applicants who graduate in the top decile of their senior class. Finally, we include the average SAT/ACT score for the student’s high school, converted into ACT-score equivalent

¹⁶The 35 applicants (0.03%) classified as “Other” at Texas Tech are treated as “white” students, whereas the 2,060 applicants (1.3%) classified as “Other” at TAMU are treated as a separate ethnic group. The results for Texas Tech are virtually identical when we drop these 35 students.

¹⁷For the most part, these institutional files do not contain other family characteristics. The exception is for UT, which began collecting data on parental education in 1996, income in 1997, and single-parent family status in 1998. (UT-Austin’s admissions officers did not have this family information as data elements to be used in admission decisions in prior years. Email communication, Dr. Bruce Walker, Vice Provost and Director of Admissions, University of Texas at Austin, June 18, 2007.) Single-parent family status was collected between 1998 and 2000, and is coded “Yes” for 14–15 percent of applicants and missing for nearly all the rest. While the use of such socio-economic indicators in admissions was sanctioned by the uniform admissions law (as described in footnote 3), there is no clear evidence that UT actually used such indicators in their admissions decisions. The sets of categorical variables for parental education and parental income are jointly insignificant in every year, except 1997, during which the parent’s education indicators were jointly significant. For 1997, there was a significant negative effect for having parent’s highest education being a high school graduate, and a significant positive effect for having parent’s highest education being a college graduate, with insignificant effects for the other four indicators of parent’s education. The single-parent family indicator variable was significant and negative for 1998, insignificant for 1999, and significant and positive for 2000. However, given the high rate of missing responses for this variable, these results should be taken with caution. Since these parental variables do not show any clear pattern of use in UT’s admissions decisions, we have dropped them from the specification. Nonetheless, the results we present are robust to the inclusion of these variables, and the full results are available on request.

¹⁸Although we have no evidence that these universities used the higher of the scores, such a procedure would be consistent in spirit with the findings of Vigdor and Clotfelter (2003), who note that for students who take the SAT test multiple times, there is a “widespread policy stated by college admissions offices to use only the highest score... for purposes of ranking applicants, ignoring the scores from all other attempts” (p. 2). Consistent with this practice, the University of Michigan’s point system, which was the subject of the Supreme Court’s *Gratz* decision, used the higher value of the points assigned based on the student’s SAT and ACT scores (<http://www.vpcomm.umich.edu/admissions/legal/gratz/grat-cert.html>, Accessed October 5, 2007). Given these widespread practices, it seems reasonable to assume that these Texas universities used the higher value of the SAT and ACT score in making their admissions decisions.

¹⁹The SAT scores at Texas Tech only include the sum of the math and verbal scores. As a result, we do not have a natural method for re-centering the scores before 1996 (as SAT math and verbal scores were separately re-centered by the College Board). To conduct the re-centering, we began with the re-centering conversion chart available from the College Board (1999). We summed the original math and verbal scores and summed the re-centered math and verbal scores (effectively, this assumes that an SAT score of X is composed of a math score of X/2 and a verbal score of X/2). We then regressed the summed recentered scores on the summed original scores and these original scores squared and cubed. The regression results were then used to “re-center” the SAT scores for Texas Tech before 1996. We examined the sensitivity of the simulation results discussed in Section 5.4 by simulating the pre-*Hopwood* admission system using only the 1996 data (for which the re-centering is not problematic). The results were relatively unchanged.

points,²⁰ and the sum of the share taking the SAT and the share taking the ACT in the student's high school.²¹

Students with missing values for their SAT/ACT score, grade point average, class rank percentile, or their high school's average SAT/ACT score are assigned the average value for that characteristic among all applicants to university j in year t , and dummy variable flags indicating missing values are included for each of these characteristics. At TAMU, courses taken and participation in various extracurricular activities are taken from SAT surveys. If the SAT survey data are unavailable, each of these variables is set equal to zero, and an indicator variable for missing SAT survey data is added. Students lacking high school identifiers are assumed not to attend a private, feeder, LOS, or Century high school, or high school in the state of Texas. Missing data for advanced placement (AP) course testing also is set equal to zero.²²

5. Results

5.1 University of Texas at Austin

Table 1 reports the admissions probit regression results for UT. To facilitate interpretation, rather than show the parameter estimates for Equation 1, we present marginal effects for each student attribute for a hypothetical applicant with mean characteristics. The first column of Table 1 presents estimates for all applicants between 1990 and 1996, which was before the *Hopwood* decision. During these years, the likelihood of admission for black and Hispanic applicants was 13 to 14 percentage points higher than comparable non-Hispanic white applicants. Year-by-year, cohort-specific estimates (not shown) also reveal consistently positive admission advantages for black and Hispanic applicants before 1996; these range from 9 to 17 percentage points, with no obvious pre-*Hopwood* trends.²³ Under the affirmative action regime, the admission probability for Asian applicants was indistinguishable from white students. Surprisingly, American Indian applicants were 3 percentage points less likely to gain admission than comparable white students (this estimate, which is statistically insignificant, is based on 468 American Indian applicants).

The second column of Table 1 again focuses on applicants in the years 1990–96, but excludes those who were in the top-10% of their Texas high school class. Among this group of applicants, race/ethnicity was an even stronger factor in admission. Specifically, the admission likelihood for Hispanic and black applicants was 30 to 31 percentage points higher than comparable non-Hispanic white applicants. This result is consistent with evidence that affirmative action largely involved students ranked in the second decile of their class because UT had a *de facto* practice of admitting applicants who graduated in the top 10 decile of their high school class (Alon and Tienda, 2007). Asian and American Indians were at disadvantages of 3 and 7 percentage points, respectively. The bottom row of Table 1, which shows the P-value for the joint test of significance for group status, reveals

²⁰For every high school in the United States, including private schools, we obtained data on average SAT scores for the years 1994–2001, and average ACT scores for the years 1991, 1992, 1994, 1996, 1998, 2000, and 2004. Since our ACT data span a greater range of years, we converted all SAT scores into ACT-equivalents. We used a linear regression of average SAT scores on average ACT scores for the years 1994, 1996, 1998, and 2000. (These regressions are weighted based on the minimum value of the number of test takers on either test). For these years, we compute a weighted average of the high school's average SAT and average ACT scores, using the number of test takers on each test as weights. For the years 1995, 1997, 1999, and 2001, we use the previous year's regression parameters for the conversion of SAT scores into ACT-equivalents. For years with missing values for the high school's average SAT/ACT score, we impute using the nearest available year and give preference to years in the same period (i.e., before and after the 1996 “re-centering” of SAT scores).

²¹These shares were determined by merging the SAT and ACT datasets discussed in the prior footnote with 11th grade enrollment data from the U.S. Department of Education, Common Core of Data. For years with missing information on the shares taking either the SAT or ACT, we impute using the nearest available year.

²²The results are relatively robust to dropping observations with missing values.

²³These results are available upon request.

that jointly, race and ethnicity was a highly significant determinant of an applicant's likelihood of admission during this period. These results accord with claims that UT practiced affirmative action for black and Hispanic applicants in the years prior to the *Hopwood* decision (THECB, 1998).²⁴

To comply with the judicial ban imposed by the *Hopwood* decision, UT immediately eliminated the admission advantages given to black and Hispanic applicants. Among students who did not graduate in the top-10% of a Texas high school, namely the students for which UT had discretion in the admission decision, the marginal effects on the likelihood of admission for black and Hispanic applicants fell to an insignificant -2 percentage points in 1997, the year the judicial ban on affirmative action was in force, but before the uniform admission law went into effect. During the years 1998–03, a period covered both by the judicial ban and the top 10% law, the marginal effects on the likelihood of being admitted in individual years ranged from +4 to +13 percentage points for blacks and from -3 to +6 percentage points for Hispanics relative to comparable white applicants.²⁵ The last column of Table 1 shows that over this whole period blacks and Hispanics enjoyed significant admission advantages of 7 and 2 percentage points, respectively. It is noteworthy that the magnitudes of the estimated advantages given to minority applicants in the years 1998–03 were substantially smaller than the advantages given in the pre-*Hopwood* years. Moreover, in the year 2003, the treatment of black and Hispanic youth strongly diverge, with black applicants receiving a significant positive boost of 13 percentage points and Hispanic applicants receiving a significant 3 percentage point reduction in their likelihood of admission (relative to whites not in the top-10%).²⁶

It is crucial to underscore that these results *do not* necessarily imply that UT was using the applicant's race or ethnicity in making their admissions decisions. Rather, UT may have changed the weights they placed on other applicant characteristics that are not available to us (e.g., essays or high school coursework), or used the observed applicant characteristics in nonlinear or interactive ways (e.g., class rank $\times$ took AP exam, etc.) that favor black and Hispanic students. The Office of Admissions at UT published criteria considered in admission since 1997, explicitly noting that in addition to the academic index based on the high school record (class rank, completion of the required curriculum, completion of additional academic units, and standardized test scores), students would be evaluated on a personal achievement index (PAI) that included scores on two essays, leadership and extracurricular activities, awards/honors, work experience, community service, and special circumstances (University of Texas at Austin, Office of Admissions, 2005). The latter includes both family and school socioeconomic status, as well as home language, domestic responsibilities, and students' test scores relative to the average for their high school. In short, the PAI scores enabled admissions officers to take a "holistic approach" in reviewing applications.²⁷

Although informative, the marginal effects can not answer whether UT admission officers changed the weights accorded to observed applicant characteristics in ways that favored minority applicants. A few results are suggestive, however. First, the positive weight placed on an applicant's SAT/ACT test score declined by half post-*Hopwood*. Second, the

²⁴The Texas Higher Education Coordinating Board (THECB) indicated that affirmative action was mainly used by the public flagships with selective admissions, but private institutions also used race-sensitive criteria to diversify their campuses.

²⁵These estimates exclude the top 10% graduates from Texas high schools who were admitted automatically if they submitted a completed application. These individual year-by-year regression results are available on request.

²⁶In the immediate aftermath of the *Grutter* decision, UT-Austin announced plans to re-introduce the use of race and ethnicity in their admissions decisions for the fall, 2004 applicants (UT Austin, 2003a; 2003b), but subsequently agreed to delay the change until fall, 2005 as required by law (UT Austin, 2003c). The Texas education code requires that an institution publish in its admission catalogue a description of the factors considered in admission a year prior to their implementation.

²⁷Beginning with the entering class of 2005, race and ethnicity were added to the list of special circumstances.

admission advantages enjoyed by applicants from high schools with high average SAT/ACT scores nearly disappeared in the post-*Hopwood* years.²⁸ Black and Hispanic students comprise relatively small shares of the student bodies at affluent high schools with high average SAT scores (Tienda and Niu, 2006b).²⁹ Finally, attending a high school that was targeted for the Longhorn Opportunity Scholarships lowered applicants' likelihoods of admission in the years 1990–1996, but had an insignificant effect on their likelihood of admission in the post-*Hopwood* years. Likewise, attending a private high school, which had been a positive factor before 1997, became a liability in the *post-Hopwood* years. Each of these changes is likely to benefit minority applicants. The simulation presented in section 5.4 illustrates how these changes, along with other components of the admissions policy, altered the composition of the admitted class.

5.2 Texas A&M University

Table 2 reports the regression results for TAMU, which gave similar admission boosts to black and Hispanic applicants as UT in the pre-*Hopwood* years. From 1992 to 1996, a black or Hispanic applicant's admission probability was 12 to 13 percentage points higher than a comparable non-Hispanic white applicant at TAMU, with some annual variation. Cohort-specific estimates reveal that preferences for black and Hispanic applicants rose from 8–10 percentage points in 1992 and 1993 to 15–18 percentage points in 1994 and 1995, and subsequently declined to 9–10 percentage points in 1996 (perhaps suggesting that TAMU responded in advance to the anticipated Hopwood ruling).³⁰ When restricted to applicants not in the top-10% of their Texas high school class, black and Hispanic admission preferences were higher still, averaging 28–29 percentage points for the pre-*Hopwood* period, with considerable variation across years (23–26 percentage points in the years 1992 and 1993, 32–36 percentage points in 1994 and 1995, and 18–19 percentage points in 1996). The large fluctuation in the size of the admission boosts for black and Hispanic students across years suggests that the university did not use pre-established quotas to make their decisions.³¹

From 1998 to 2002, black and Hispanic applicants were slightly *less* likely to be accepted than comparable white youth, although this difference was insignificant. This average effect conceals substantial year to year fluctuations, however. The estimated penalty (boost) accorded to black and Hispanic applicants, respectively, ranged from –8 to +11 and from –9 to +9 percentage points, with no clearly discernable trends.

Among applicants not in the top-10% of their Texas high school class, the admission probability for Asian Americans was 3 percentage points lower than comparable white applicants between 1992 and 1996. After the top 10% law was in force, this disadvantage widened to 14 percentage points. This admission disadvantage, which ranged from 6 to 19 percentage points over the post-*Hopwood* years, was statistically significant in each year. Again, it bears emphasizing that this result does not necessarily indicate that Texas A&M discriminated against Asian American applicants. Among Texas students who did not graduate in the top decile of their class, it is possible that TAMU considered other

²⁸It is possible that these declining weights placed on the student's SAT/ACT test score and their high schools' SAT/ACT scores could reflect increasing weight placed on unobserved student characteristics that are negatively correlated with these observed characteristics.

²⁹Correlations between average test scores and the percent of the student body that is black or Hispanic are consistently negative, ranging from –.24 to –.44; when both groups are combined, the correlation rises to –.53.

³⁰The first decision in the case, by Judge Sparks of the Federal district court in Austin, Texas, was released on August 19, 1994 (Kain and O'Brien, 2004).

³¹Between the years 1992 and 1995, the number of applications from black and Hispanics increased, and the average SAT/ACT score of these minority applicants increased. Thus, the higher preferences given to black and Hispanic applicants in the years 1994 and 1995 do not reflect an attempt by Texas A&M to offset declining pools of qualified minority applicants.

unobservable applicant characteristics or used the observed applicant characteristics in ways that favor white students.³²

In every year during both the pre- and post-*Hopwood* periods, race and ethnicity were highly influential in determining the likelihood that an applicant to TAMU would be admitted, although the winners and losers differed by period and demographic group. By law, the university could not directly consider these ascribed characteristics in their admission decisions after 1996, therefore the apparent disadvantages experienced by black, Hispanic, and Asian applicants likely reflect either the weight placed on other applicant characteristics that are not available in the administrative data, or interactive combinations of the observed characteristics that favor white applicants. While these results show that university admission officers did not place weights on *unobserved* applicant characteristics in ways that favored black or Hispanic applicants after the judicial ban on affirmative action, it is both permissible and plausible that they changed the weights placed on *observed* applicant characteristics in a manner that boosted minority students' likelihood of admission. For example, when we restrict the sample to students not in the top-10% of their Texas high school class, we observe declining weight placed on the student's SAT/ACT and their high school's average SAT/ACT score, and increasing weight placed on attending a high school that was targeted for the Longhorn or Century Scholarships. The effects of these changes are simulated in Section 5.4.

5.3 Texas Tech University

Apparently Texas Tech did not mirror UT-Austin and Texas A&M in giving sizeable admission boosts to black and Hispanic applicants in the years before *Hopwood* (see THECB, 1998). In fact, as shown in Table 3, from 1991 through 1996 black applicants were slightly less likely (–1 percentage points) to be accepted than comparable white applicants, while Hispanic applicants were slightly more likely to be accepted (+1 percentage points). Asian American applicants were significantly less likely to be accepted than comparable white applicants, by 9 percentage points.

This practice continued after the judicial ban on affirmative action. Between 1998 and 2003, black, Hispanic, and Asian American applicants who did not qualify for automatic admission under the uniform admission law were significantly less likely to be accepted than comparable white applicants. Moreover, the admission disadvantages for black applicants to TTU who did not graduate in the top decile of their Texas high school were even larger compared with pre-*Hopwood* levels, ranging from 9 to 12 percentage points over the period and statistically significant in each year. Likewise, beginning in 2000, Hispanic applicants witnessed a significant admission disadvantage relative to comparable white students, which ranged from 3 to 6 percentage points through 2003. Asian American applicants also were 4 to 8 percentage points less likely to be accepted at TTU than comparable white students who applied for admission between 1998 and 2003; moreover, their acceptance disadvantages reached statistical significance after 2001. Thus, there does not appear to be any evidence that TTU's admission officers used unobserved applicant characteristics in ways that boosted the admissions probabilities of black and Hispanic applicants when the ban on affirmative action was in force – rather, it appears that Texas Tech placed such applicants at a disadvantage post-*Hopwood*.

With respect to observable applicant characteristics, the results are mixed. On the one hand, the positive weights placed on attending a feeder or private high school declined, which

³²Asian students are highly likely to qualify for the admission guarantee and thus well represented at the public flagships relative to their population share. For example, Tienda and Niu (2006b) show that Asian students represented 4 percent of Texas high school graduates in 2002, but 10 percent of students who graduated in the top decile of their class.

would tend to favor minority applicants. On the other hand, the weight placed on the student's SAT/ACT scores increased, and attending a Longhorn Opportunity High School became a disadvantage to the applicant. The following section evaluates the relative impact of changing admission policies on the ethno-racial composition of these three universities.

5.4 Simulated Effects of Hopwood, the Top-10% policy, and University Responses

Because the weights assigned to several individual attributes appear to have changed at each of the three universities, we disaggregate the net impacts using a simulation exercise. The composition of the admitted class is simulated by computing the hypothetical probability of admission (as shown in Equation 1, with a standard normal error term added to $\hat{\beta}_0 + U_i\hat{\beta}_{jt} + X_i\hat{\theta}_{jt}$) and "accepting" Z_t number of students with the highest probabilities of admission. Z_t is set equal to the number of students who were actually admitted by each institution in year t .^{33, 34}

Table 4 reports the shares of white, black, Hispanic and Asian students who would be admitted (with American Indian and International shares not shown) along with the mean SAT/ACT of admitted students. Each panel shows four counterfactuals:

- A. "Actual Admit Class" = Students actually admitted;
- B. "Predicted Admit Class with AA" = Admitted students simulated by applying the estimated 1990–96 admissions formula in each year;
- C. "Predicted Admit Class with AA Ban" = Admitted students simulated by applying the estimated 1990–96 admission formula, but setting race-ethnicity coefficients to zero; and
- D. "Predicted Admit Class with AA Ban and Automatic Top-10%" = Admitted students simulated by applying the estimated 1990–96 admission formula, but setting race-ethnicity coefficients to zero and admitting all in-state top-10% students.

Table 4 shows the simulation results. By comparing the distributions of admitted students between counterfactuals A and B (i.e., A – B), we obtain an estimate of the total effect of *Hopwood*, the top-10% policy, and other changes to the universities' admissions policies. For the years after 1997, this total effect can be decomposed into A – D and D – B, where D – B reveals the admission consequences of *Hopwood* and the top-10% law, and A – D shows the effects of discretionary changes in the admissions policy implemented by each institution.

For UT, the row designating net effects of the policy change shows that the combined effects of *Hopwood* and the top-10% law shifted the composition of the admission class towards whites and Asian-Americans, and away from blacks and Hispanics. For blacks and Hispanics, the net effect of these policy changes lowered their combined shares of admitted students from 19.8% to 17.7%. However, other changes in UT's admissions decisions offset some of these effects. The discretionary changes in UT's admissions decisions shifted the composition of UT's admitted students towards blacks, Hispanics, and Asian-Americans,

³³For these simulations, we replace each applicant in the dataset with 10 copies of that applicant's record prior to adding the random error term. This expansion of the dataset was done to avoid producing misleading results that might have arisen due to small sample sizes of minority applicants.

³⁴These simulations take the applicant pool as a given. However, for each university, the difference between rows D and B for the pre-*Hopwood* years are fairly similar to the differences between rows D and B for the years 1998–03, suggesting that the effects of *Hopwood* and the Top-10% law would have been similar even if the applicant pools have changed. Thus, we do not believe that the changing composition of the applicant pool alters our central findings. A further discussion of changes in the applicant pools can be found in the Appendix.

and away from whites. This policy response helped recover the combined share of admitted black and Hispanic students to 18.4%. That is, UT's response produced a 32% rebound in black and Hispanic students' combined share of admitted students (i.e., $(18.4\% - 17.7\%)/(19.8\% - 17.7\%)$).³⁵ Nonetheless, despite a re-weighting of applicant characteristics in a legally compliant manner, the university was unable to maintain the share of black and Hispanic students that would have been admitted under a regime that allowed explicit consideration of race.

Finally, it is worth noting that the combined effects of *Hopwood*, the top-10% policy, and UT's response led to a modest 11-point *reduction* in the average SAT/ACT score of admitted students. Most of this decrease resulted from discretionary changes in the weights placed on other applicant characteristics by UT's admission officers rather than the mandatory policy changes. This result might be surprising to those who expect the elimination of affirmative action at selective institutions to substantially *raise* the average ability level of admitted students, and it challenges critics who might attribute the drop in average test scores to the top 10% law.

The second panel of Table 4 shows the collective effects of changes in TAMU's admission regime. As occurred at UT, the winners from the combined effects of *Hopwood* and the top-10% policy were white and Asian American applicants, whose share of the admission pool rose. Again, blacks and Hispanics were the losers in the shuffle produced by the affirmative action ban and the top 10% law combined; the net effect of these policy changes was to lower their combined shares of admitted students from 17.2% to 14.0%. As occurred at UT, changes in the weights placed on other applicant characteristics by TAMU's admissions officials offset some of these losses. The discretionary changes in TAMU's admissions decisions increased black and Hispanic students' combined share of admitted students to 14.5%. Thus, TAMU's discretionary response in admissions led to a 18% rebound in black and Hispanic students' combined share of admitted students (i.e., $(14.5\% - 14.0\%)/(17.2\% - 14.0\%)$).³⁶ Further, the collective impact of changes in policy and weights assigned to applicant attributes produced a 7-point decline in the average SAT/ACT score of students admitted to TAMU, a drop due entirely to changes in the weights placed on applicant characteristics. Our results showing that the strategies to restore campus diversity pursued at UT and TAMU did not restore minority representation to the levels that would have occurred with traditional affirmative action are consistent with the findings in Bucks (2003) and Kain and O'Brien (2004).

The third panel of Table 4 presents the simulation results for Texas Tech. The policy change row shows the combined effects of TTU complying with both the *Hopwood* ruling and the top 10% law. For this simulation, compliance with the *Hopwood* ruling would require Texas Tech to eliminate pre-*Hopwood* admissions advantages for Hispanic applicants, and disadvantages for black and Asian American applicants. This simulation thus predicts a modest decline in the share of white and Hispanic students admitted, combined with increases in the shares of black and Asian American students. The final row shows the effect of discretionary changes in TTU's admissions policy, which benefited white students and lowered other students' admission shares. On balance, there is no evidence that TTU sought

³⁵Comparing rows "C: AA Ban" and "D: AA Ban + Top 10%", we find that the top-10% policy led to a rebound of 42% (i.e., $(17.7\% - 16.2\%)/(19.8\% - 16.2\%)$). This rebound is comparable to the findings in Long (2004b). Using national data holding applications constant, Long predicts that a top-10% policy would produce rebounds of 43%, 16%, and 10% for public colleges in the top-decile, second-decile, and second-quintile of the freshman SAT score distribution, respectively. Comparing rows "A: Actual Admits" and "C: AA Ban", we find that the combination of the top-10% policy and UT-Austin's re-weighting of applicant characteristics led to a rebound of 60% (i.e., $(18.4\% - 16.2\%)/(19.8\% - 16.2\%)$).

³⁶The top-10% policy had a smaller effect on black and Hispanic student's combined share at Texas A&M than at UT-Austin, with a rebound of only 12% (i.e., $(14.0\% - 13.5\%)/(17.2\% - 13.5\%)$). The combination of the top-10% policy and Texas A&M's re-weighting of applicant characteristics led to a rebound of 28% (i.e., $(14.5\% - 13.5\%)/(17.2\% - 13.5\%)$).

to boost the admission prospects of black and Hispanic students in the wake of the *Hopwood* decision. Finally, in contrast to the experiences of the two public flagships, the shift in admission regimes coupled with changes in the institution-specific admission system raised the average SAT/ACT score of students admitted to TTU by 7 points.

Figure 1 diagrams the net effects on the composition of admitted students of the *Hopwood* decision, the Top-10% policy, and other discretionary changes in the admission decisions of these three universities. This figure corresponds to a plot of the difference between the “Actual Admits” and “Predicted Admits” under the admission regime that permitted affirmative action, but disaggregated by individual years. At all three universities, which differ appreciably in the selectivity of their admissions, white students were the clear winners in that their rising shares among the admitted were accompanied by corresponding declines for black and Hispanic applicants. Not surprisingly, the impact of the change in admission regime was greatest at TAMU and UT, which gave admission boosts to minority applicants before the judicial ban imposed by the *Hopwood* decision. Using the simulation results shown in Table 4, and given the total numbers of students admitted in the post-*Hopwood* years, we find that the combination of the policy and discretionary changes reduced the number of accepted black and Hispanic applicants by 1,288 at UT (1997–03), 1,813 at TAMU (1997–02), and 746 at TTU (1997–03).

6. Conclusion

The *Hopwood* decision and the top-10% policy had sizable effects on the racial and ethnic composition of public universities in Texas—but the winners and losers differed across institutions and over time. We find evidence that the public flagships (UT-Austin and Texas A&M) offered significant advantages to black and Hispanic applicants prior to the *Hopwood* decision. Both universities responded to changes in admission policies by shifting the weights they placed on applicant characteristics in ways that boosted the admissions probabilities of black and Hispanic applicants. However, these efforts did not fully compensate for the effects of the *Hopwood* decision in lowering the odds of admission for blacks and Hispanics. Public universities were unable (or did not sufficiently attempt) to proxy race and ethnicity using other applicant attributes, although UT’s Personal Achievement Index (PAI) sought to weight extracurricular and extraordinary circumstances in their admission decisions in ways that could have boosted minority applicants’ admission probabilities. Further, the two flagships targeted fellowships to high schools with low college going traditions. Although minority students comprised large shares of the student body at the Longhorn and Century high schools, they are less likely than whites to qualify for the admission guarantee, and more likely to report financial barriers as reasons for not enrolling (Tienda and Niu, 2006b). This suggests the need for financial aid as a necessary adjunct to race-sensitive admission criteria as an ingredient for diversifying college campuses. Finally, we find no evidence that Texas Tech University gave preferences to minority applicants in the pre- or post-*Hopwood* period, and changes in TTU’s post-*Hopwood* admissions policy lowered the probability of acceptance for minority applicants.

Also unclear is whether public universities that did not use full file review could have used proxies in ways that allowed them to maintain campus diversity achieved before the *Hopwood* decision. Simulations produced by Kane (1998b) suggest the folly of using proxies in this manner; in order to maintain the same admissions rates for black and Hispanic applicants, the new admissions rules imply that colleges in the top-quintile of the SAT/ACT distribution would have to include a *lower* chance of admission for students with higher SAT scores! Thus, our findings showing only modest shifts in the weights used by these colleges in their admissions systems are highly plausible.

Minority applicants were the “winners” of the institutional responses by UT and Texas A&M. Despite their intentions in restoring and maintaining campus diversity, however, these institutional efforts were unable to offset the deleterious effects of the judicial ban on affirmative action imposed by the *Hopwood* decision. In the end, minority applicants were the net “losers” of the changing admission regimes while whites continued to maintain their admission advantage. This outcome is all the more remarkable in a state where black and Hispanic students are rapidly moving towards being the majority of high school graduates.

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Figure 1.

Net effect on the ethnic and racial composition of admission cohorts of *Hopwood*, the Top 10% law, and allowable discretionary changes in university admission policies: UT-Austin, Texas A&M, and Texas Tech, 1991 – 2003.

Table 1

UT-Austin -- Admission Probit Regression Results^a

Applicant Characteristic	Admission Entry Year			
	1990–96	1990–96	1997	1998–03
Race/Ethnicity				
Black	0.132***	0.309***	−0.017	0.070***
Hispanic	0.142***	0.302***	−0.023	0.016**
Asian	−0.007	−0.028***	−0.015	0.047***
American Indian	−0.032	−0.072**	−0.042	−0.043
Ethnic=International	0.116***	0.221***	−0.069	−0.257***
U.S. Citizen	0.084***	0.091***	0.069***	0.061***
Female	−0.001	−0.003	0.046***	0.052***
Test Scores and Class Rank				
SAT/ACT (00s)	0.152***	0.286***	0.127***	0.153***
SAT/ACT = Missing	−0.680***	−0.543***	−0.776***	−0.566***
Class Rank Percentile (0s)	0.101***	0.175***	0.158***	0.116***
Class Rank PCT = Missing	−0.257***	−0.384***	−0.331***	−0.203***
Top 10%	0.079***	−0.110***	−0.223***	0.166***
AP Exams				
Took Test	0.141***	0.258***	0.137***	0.348***
Passed Math Test			−0.005	0.171***
Passed Science Test			0.050	0.096***
Passed Foreign Language Test			0.028	0.092***
Passed Social Science Test			0.010	0.020
Passed Other Test			0.096***	0.011
High School Characteristics				
SAT/ACT Average Score (in ACT points)	0.007***	0.017***	0.006	0.003*
SAT/ACT Average Score = Missing	−0.241***	−0.349***	−0.205***	−0.017
% Took SAT + % Took ACT	0.015**	0.051***	0.039	0.018
% Took SAT + % Took ACT = Missing	0.013*	0.021*	0.003	0.066***
Feeder	0.007	0.019***	0.014	0.020***
LOS	−0.033***	−0.050***	−0.054	−0.001
Century	0.006	−0.013	0.034	0.006
Private	0.037***	0.075***	0.048**	−0.019*
In-state	0.096***	0.079***	−0.040**	0.060***
Including In-state Top-10% Applicants?	Yes	No	No	No
Number of Observations	103,547	72,073	10,592	72,553
McFadden's Pseudo-R ²	51.9%	46.8%	51.1%	37.4%
Joint Significance of Race-Ethnicity Variables (p-value)	0.0%***	0.0%***	45.6%	0.0%***

^a***, **, and * indicate two-tailed significance at the 1%, 5%, and 10% levels.

Note: Table displays the marginal effect of each dependent variable for an applicant with mean characteristics. When multiple years are included in the regression, the specification also includes a vector of year of application dummy variables. Standard errors (which are omitted here for space concerns) are available upon request.

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Table 2

Texas A&M -- Admission Probit Regression Results^a

Dependent Variable	Admission Entry Year			
	1992–96	1992–96	1997	1998–02
Race/Ethnicity				
Black	0.124***	0.286***	−0.040	−0.021
Hispanic	0.132***	0.280***	0.014	−0.013
Asian	−0.014**	−0.029**	−0.110***	−0.141***
American Indian	0.008	0.020	−0.071	0.039
Ethnic=Other	−0.065***	−0.102***	−0.063**	−0.078***
U.S. Citizen	0.062***	0.113***	0.085***	0.071***
Female	−0.006**	−0.011**	0.043***	−0.011**
Test Scores				
SAT/ACT (00s)	0.102***	0.183***	0.122***	0.125***
SAT/ACT = Missing	−0.224***	−0.312***	−0.334***	−0.313***
Class Rank Percentile (0s)	0.084***	0.147***	0.152***	0.141***
Class Rank PCT = Missing	−0.037***	−0.074***	−0.083***	−0.126***
Top 10%	0.100***	0.026*	0.130***	0.156***
Curriculum				
Took AP Test	−0.024***	−0.043***	−0.042***	−0.060***
Took 4 Years of HS English	0.001	0.006	−0.013	−0.003
Took 2 Years of HS Foreign Language	0.026***	0.032***	−0.007	0.030**
Took 3 Years of HS Math	0.024***	0.037**	0.004	0.002
Took 2 Years of HS Science	−0.042***	−0.068***	−0.042	−0.081***
Activities				
HS Band	0.015***	0.030***	0.032	0.002
HS Athlete	0.021***	0.040***	0.076***	0.040***
HS Drama			0.009	0.030***
HS Student Government	0.016***	0.031***	0.074***	0.071***
HS National Honor Society	0.048***	0.088***	0.058***	0.047***
HS Year Book	−0.028***	−0.041***	0.050**	−0.010
HS Hobby Club	−0.003	−0.005	0.004	−0.006
SAT Survey Data Missing	0.098***	0.202***	0.150***	0.090***
High School Characteristics				
SAT/ACT Average Score (in ACT points)	0.005***	0.010***	−0.008	−0.020***
SAT/ACT Average Score = Missing	0.041***	0.072***	0.082**	0.177***
% Took SAT + % Took ACT	0.036***	0.059***	−0.039	−0.024**
% Took SAT + % Took ACT = Missing	−0.013**	−0.028**	−0.039*	0.042***
Feeder	0.003	0.010	−0.012	0.018**
LOS	−0.036***	−0.055**	−0.064	−0.012
Century	0.021**	0.050***	0.092**	0.193***
Private	0.022***	0.047***	0.018	−0.005

Dependent Variable	Admission Entry Year			
	1992–96	1992–96	1997	1998–02
Instate	0.202***	0.245***	0.195***	0.182***
Including In-state Top-10% Applicants?	Yes	No	No	No
Number of Observations	69,691	46,701	10,016	52,525
McFadden's Psuedo-R ²	40.4%	0.5%	29.8%	24.7%
Joint Significance of Race-Ethnicity Variables (p-value)	0.0%***	0.0%***	0.0%***	0.0%***

^a***, **, and * indicate two-tailed significance at the 1%, 5%, and 10% levels.

Note: Table displays the marginal effect of each dependent variable for an applicant with mean characteristics. When multiple years are included in the regression, the specification also includes a vector of year of application dummy variables. Standard errors (which are omitted here for space concerns) are available upon request.

Table 3

Texas Tech -- Admission Probit Regression Results^a

Dependent Variable	Admission Entry Year			
	1991, 1993, 1995, 1996	1991, 1993, 1995, 1996	1997	1998-03
Race/Ethnicity				
Black	-0.013*	-0.008	0.030	-0.105***
Hispanic	0.013***	0.024***	0.032	-0.046***
Asian	-0.091***	-0.084***	0.024	-0.067***
American Indian	-0.033	-0.055	0.008	-0.003
Ethnic=International	-0.376***	-0.408***	0.085	0.158***
U.S. Citizen	0.001	0.002	-0.066	0.064***
Female	-0.018***	-0.026***	0.030	-0.003
Test Scores and Class Rank				
SAT/ACT (00s)	0.012***	0.022***	0.105***	0.123***
SAT/ACT = Missing	-0.286***	-0.357***	-0.963***	-0.650***
Class Rank Percentile (0s)	0.047***	0.063***	0.004	0.065***
Class Rank PCT = Missing	-0.844***	-0.852***	-0.627***	-0.733***
Top 10%	-0.027***	-0.025	0.051	-0.169***
High School Characteristics				
HS SAT/ACT Average Score (in ACT points)	0.009***	0.015***	-0.004	0.018***
HS SAT/ACT Average Score = Missing	0.005	-0.001	0.050	0.036**
% Took SAT + % Took ACT	0.012	0.017	-0.075	-0.008
% Took SAT + % Took ACT = Missing	-0.003	0.008	0.008	0.000
Feeder HS	0.014**	0.017**	-0.108***	-0.024***
LOS HS	-0.018*	-0.014	-0.168*	-0.134***
Century HS	-0.017	-0.007	-0.102	-0.020
Private HS	0.020*	0.027*	-0.077	-0.008
Instate HS	0.006	0.012	0.002	0.003
Including In-state Top-10% Applicants?	Yes	No	No	No
Number of Observations	25,509	20,892	6,046	50,661
McFadden's Pseudo-R ²	51.3%	51.0%	84.8%	45.9%
Joint Significance of Race-Ethnicity Variables (p-value)	0.0%***	0.0%***	76.8%	0.0%***

^a***, **, and * indicate two-tailed significance at the 1%, 5%, and 10% levels.

Note: Table displays the marginal effect of each dependent variable for an applicant with mean characteristics. When multiple years are included in the regression, the specification also includes a vector of year of application dummy variables. Standard errors (which are omitted here for space concerns) are available upon request.

Table 4

Effects of University Responses to Hopwood and the Top-10% Policy

Period & Place	Counterfactual	%white	%black	%Hispanic	%Asian	SATACT
UT-Austin						
1990-96: Pre-Hopwood	A: Actual Admits	65.1	4.0	15.9	12.8	1,229
	B: Predicted Admits	65.2	4.0	15.9	12.7	1,228
	C: AA Ban	68.0	3.1	13.2	13.3	1,232
	D: AA Ban + Top 10%	67.2	3.2	14.0	13.3	1,228
1997: Hopwood	A: Actual Admits	65.7	3.2	12.4	16.0	1,234
	B: Predicted Admits	63.4	3.9	13.8	15.5	1,235
	C: AA Ban	65.1	3.1	12.2	15.9	1,238
	<i>Policy Change (C-B)</i>	<i>1.9</i>	<i>-1.0</i>	<i>-1.8</i>	<i>0.4</i>	<i>3</i>
1998-03: Top-10%	<i>Discretionary (A-C)</i>	<i>0.0</i>	<i>0.2</i>	<i>0.1</i>	<i>0.1</i>	<i>-4</i>
	A: Actual Admits	61.7	3.9	14.5	17.1	1,236
	B: Predicted Admits	60.3	4.3	15.6	16.0	1,247
	C: AA Ban	62.8	3.3	12.9	16.7	1,251
1997: Hopwood	D: AA Ban + Top 10%	61.7	3.7	14.0	16.6	1,244
	<i>Policy Change (D-B)</i>	<i>2.1</i>	<i>-0.8</i>	<i>-2.2</i>	<i>0.5</i>	<i>-3</i>
	<i>Discretionary (A-D)</i>	<i>-0.9</i>	<i>0.4</i>	<i>0.7</i>	<i>0.4</i>	<i>-8</i>
Texas A&M						
1992-96: Pre-Hopwood	A: Actual Admits	73.4	5.1	14.6	5.9	1,172
	B: Predicted Admits	73.3	5.1	14.6	5.9	1,172
	C: AA Ban	76.7	3.9	12.0	6.3	1,175
	D: AA Ban + Top 10%	76.4	4.0	12.2	6.3	1,174
1997: Hopwood	A: Actual Admits	75.1	3.7	11.5	6.7	1,185
	B: Predicted Admits	72.4	4.7	13.1	6.9	1,188
	C: AA Ban	75.1	3.5	10.9	7.3	1,191
	<i>Policy Change (C-B)</i>	<i>3.4</i>	<i>-1.4</i>	<i>-2.6</i>	<i>0.5</i>	<i>3</i>
1998-02: Top-10%	<i>Discretionary (A-C)</i>	<i>-0.6</i>	<i>0.3</i>	<i>0.7</i>	<i>-0.6</i>	<i>-6</i>
	A: Actual Admits	76.8	3.4	11.2	6.5	1,187
	B: Predicted Admits	74.1	4.2	13.0	6.8	1,194
	C: AA Ban	77.3	3.1	10.4	7.2	1,197

Period & Place	Counterfactual	%white	%black	%Hispanic	%Asian	SATACT
Texas Tech	D: AA Ban + Top 10%	76.9	3.2	10.7	7.1	1,195
	<i>Policy Change (D-B)</i>	3.7	-1.3	-2.3	0.5	1
	<i>Discretionary (A-D)</i>	-0.5	0.3	0.4	-0.7	-8
	A: Actual Admits	78.6	4.4	13.6	2.3	1,057
	B: Predicted Admits	79.0	4.3	13.8	2.3	1,057
	C: AA Ban	78.8	4.4	13.5	2.6	1,057
	D: AA Ban + Top 10%	78.8	4.4	13.5	2.6	1,057
	A: Actual Admits	81.8	3.9	10.3	2.8	1,097
	B: Predicted Admits	82.1	3.7	10.6	2.7	1,097
	C: AA Ban	82.0	3.8	10.3	3.0	1,098
	<i>Policy Change (C-B)</i>	-0.1	0.1	-0.3	0.3	0
	<i>Discretionary (A-C)</i>	-0.2	0.1	0.0	-0.2	-1
1998-03; Top-10%	A: Actual Admits	80.3	3.5	11.4	3.3	1,106
	B: Predicted Admits	79.8	4.0	12.6	3.0	1,098
	C: AA Ban	79.6	4.1	12.3	3.4	1,099
	D: AA Ban + Top 10%	79.5	4.1	12.3	3.4	1,099
	<i>Policy Change (D-B)</i>	-0.3	0.1	-0.3	0.4	1
	<i>Discretionary (A-D)</i>	0.8	-0.5	-0.9	-0.1	7
Counterfactual:						
A: Actual Admits =	Actually admitted.					
B: Predicted Admits =	Simulated by applying the 1990-96 admissions formula in each year.					
C: AA Ban =	Simulated by applying the 1990-96 admission formula, but setting race-ethnicity coefficients to zero (i.e., automatic effect of <i>Hopwood</i>).					
D: AA Ban + Top 10% =	Simulated by applying the 1990-96 admission formula, but setting race-ethnicity coefficients to zero and admitting all in-state top-10% students (i.e., automatic effect of <i>Hopwood</i> and Top-10% policy).					
<i>Policy Change (D-B)</i> =	Effect of policy changes in the University's admissions required by <i>Hopwood</i> and the Top-10% Policy for the years after 1997.					
<i>Discretionary (A-D)</i> =	Net effect of discretionary changes in the University's admissions policy for the years after 1997.					