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Changes in Texas Universities' Applicant Pools after the *Hopwood* Decision

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Abstract

This paper evaluates how the distribution of applicant and enrollee attributes at seven Texas universities changed after the *Hopwood* decision and the implementation of a policy guaranteeing admission to students with high class ranks. We analyze changes in the distributions of test scores and high school class ranks for underrepresented minority groups as well as white and Asian American applicants across institutions and between admission regimes. We show that these admissions policy changes, which have direct effects on only the most selective institutions, have substantial indirect effects at other institutions. Average test scores of applicants to less selective institutions rose following the change in admission criteria, as students with high test scores who did not qualify for the admission guarantee applied to a broader set of institutions. Furthermore, as the share of high rank applicants at UT-Austin rose, the pre-*Hopwood* assent in the test scores of their applicants stagnated.

Keywords

College affirmative action; race-neutral policies; application decisions

1. Introduction

The past two decades have witnessed broad swings in the legality of using affirmative action in university admissions and in the strategies used to boost minority enrollment. In 1996, the Fifth Circuit Court of Appeals ruled in the case of *Hopwood v. Texas* that the University of Texas School of Law was not permitted to “use race as a factor in deciding which applicants to admit in order to achieve a diverse student body” (*Hopwood v. Texas*, 78 F.3d 932, 962 (5th Cir. 1996)). The *Hopwood* decision banned affirmative action at all public universities throughout the Fifth Circuit beginning in 1997. As the two selective public institutions that practiced affirmative action prior to *Hopwood*, the University of Texas at Austin (UT) and Texas A&M University (TAMU), witnessed significant declines in minority student enrollment. In response to mounting public concern regarding the ensuing drop in minority students at both public flagships,¹ then Governor George W. Bush signed House Bill 588

(“Uniform Admission Policy”), which guarantees admission to all high school seniors with grades in the top-ten percent of their own high school classes. Under the Texas top 10% law, class rank is determined on a school-specific basis, which means that students essentially complete with their own classmates.

In 2003, the U.S. Supreme Court’s decisions in the *Grutter* and *Gratz* cases upheld the constitutionality of non-formulaic affirmative action policies, thus overturning the *Hopwood* decision.² Although non-formulaic affirmative action is permissible under federal law, voter referenda and administrative decisions prohibit the use of race-sensitive admissions in California, Florida, Washington, Michigan, and Nebraska. The University of Texas at Austin was the only Texas institution to reinstitute the use of affirmative action (beginning in 2005), but the announcement triggered new legal challenges (Haurwitz, 2008). Meanwhile, there is mounting pressure from legislators of affluent UT administrators, the Top-10% law will remain in force at least through the 2010 admission season.³

To date most of the policy and research attention has focused on the *direct* effects on *admissions* of the policy changes and changes in the composition of freshman enrollment, to the almost complete neglect of possible changes in application behavior. It is highly likely, however, that changes in admission criteria also create incentives for students to modify their application behavior in response to perceived changes in their admission probabilities (Brown and Hirschman, 2006). To the extent that such changes in application behavior occur, the *indirect* effects of the policy shift on the composition of admitted and enrolled students may be larger than the direct effects.⁴ Because Texas’ uniform admission policy constrains the freedom of institutions to shape their freshman classes by allowing rank-eligible applicants to choose their university, as the share of applicants qualified for the guarantee rises, the characteristics of the applicant pool will increasingly mirror the freshman cohorts.

Whether and how much the change in admission policy altered the composition of enrollment via changes in *application behavior* is an empirical question, which we answer by addressing whether high school seniors altered their application behavior in response to the policy change, and how these changes are related to the selectivity of the institutions to which they applied. Furthermore, we consider how changes in applicant pools transformed the characteristics of the admittee and enrollee pools via the admission guarantee (i.e., as the share of students eligible for automatic admission rose). We are particularly interested in establishing whether changes in the ethno-racial composition of applicant pools altered the achievement characteristics of admitted and enrolled students across institutions that differ in the selectivity of their admissions. As shown below, we find that the average test scores of applicants to less selective institutions rose following the change in admission criteria, as students with high test scores who did not qualify for the admission guarantee applied to a broader set of institutions. Furthermore, as the share of high rank applicants at UT-Austin rose, the pre-*Hopwood* ascent in the test scores of their applicants stagnated.

¹Between 1995 and 1997, black, Hispanic, and Native American students’ share of enrollment fell 20.3% to 16.0% at the University of Texas at Austin and from 19.9% to 13.4% at Texas A&M University (Long, 2007).

²In *Gratz v. Bollinger*, the Court found the University of Michigan’s undergraduate admissions policy of assigning a set amount of additional points to applicants who are in underrepresented racial groups to be unconstitutional. However, the Court affirmed the right of admissions committees to consider race in the context of an individual’s specific application, rather than giving a uniform, preferential treatment to all members of a racial or ethnic group. In *Grutter v. Bollinger*, the Court upheld the constitutionality of the University of Michigan Law School’s admissions policy, in which the committee factors-in an applicant’s race without an explicit formula, in order to come up with a “critical mass” of students of various races. districts and administrators at the University of Texas at Austin, which has become saturated with applicants who are eligible for automatic admission, to rescind or modify the law (Grissom, 2009; Haurwitz, 2009). Despite growing opposition from legislators representing affluent school districts and

³Even if repealed or modified by the 2009 legislature, H.B. 588 stipulated that any revision in admission criteria would not go into effect for one year following approval by the legislature so that all school districts had ample time to learn about the change.

⁴See Brown and Hirschman (2006) for simulation evidence showing the potential importance of applicant responses.

In addition to focusing on changes in application behavior among more and less selective post-secondary institutions, our study improves on prior studies by analyzing application behavior directly, rather than relying on proxy indicators, and using time series data for gauging responses to policy shifts, which may require several years to mature. To date most knowledge about how affirmative action influences students' application behavior is based on pooled cross-sectional studies that analyze where students sent their SAT score reports after several states banned affirmative action. These studies generate inconsistent findings, however.

Card and Krueger (2005) analyze test-score sending patterns for highly qualified students (i.e., those with SAT scores above 1150 or who self-report having an A/A+ grades) from Texas and California. They find no evidence of changes in the number of score reports sent, the average SAT score of students' least selective college (i.e., "safety school"), or the largest underrepresented minority share among the colleges where highly qualified minority students sent their test scores. They conclude that the elimination of affirmative action did not adversely affect the application behavior of highly qualified minority students—precisely the target of the Top 10% law. Long (2004) evaluates shifts in SAT score-reporting behavior for *both* higher- and lower-qualified minority and non-minority students; he finds changes in the institutions where minority and non-minority students sent their SAT scores which is consistent with an increasing quality gap between minorities and other applicants.

Focusing specifically on Texas, Thomas (2004) examines where students sent their SAT scores in 1998, the year H.B. 588 went into effect, with particular attention on score reports sent to five "selective" Texas public universities (defined using Barron's Profiles of American Colleges). Controlling for the students' sex, academic qualifications, type of high school attended, family income, parents' education levels, number of courses in various high school subjects, and intended college major and degree, she finds that black and Hispanic students are significantly less likely than whites to send their SAT scores exclusively to selective Texas institutions, but significantly more likely to send their SAT scores only to selective out of state universities. Although she argues that the results indicate a response to the judicial ban on affirmative action, Thomas lacks data for pre-*Hopwood* cohorts to substantiate this inference, which is suggestive at best. All three papers share two limitations: (1) an inability to examine where students actually applied and (2) the lack of direct tests showing how the policy changes affected the aggregate characteristics of the pool of applicants at selective and nonselective institutions.

Accordingly, we evaluate changes in application behavior among graduates from Texas public high schools using administrative records for several public Texas universities. Comparing student application behavior among institutions that differ in the selectivity of their admissions is important for appreciating the full impact of new admission regime both because most prior studies focus on admission and enrollment decisions, to the neglect of application behavior, and because virtually all focus on the State's two public flagships. UT and TAMU combined account for less than 30 percent of enrollment at four-year public institutions. Moreover, growth in enrollment in the state's four-year institutions did not keep pace with increases in demand; two-year institutions largely fueled the growth in Texas post secondary enrollment since the Top 10% law was implemented (Tienda and Sullivan, 2009).

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⁵See Texas Higher Education Coordinating Board (THECB), 2009, Texas Higher Education Quick Facts 2008. <http://www.theccb.state.tx.us/Reports/PDF/1096.PDF> and <http://www.theccb.state.tx.us/Reports/XLS/1637.XLS> (Accessed March 25, 2009).

Our results indicate that the Top-10% admission regime appears to have modified the distribution of applicant characteristics to the state's public institutions. Although the number of applications to the public flagships (UT and TAMU) soared, the ethno-racial composition of applicant pools was not dramatically changed. Rather, UT witnessed stagnation in the SAT/ACT distribution of its applicants (reversing a pre-policy upward trend), while the test scores of TAMU applicants continued a slow upward drift. These outcomes suggest a slight movement of top-decile students with lower test scores toward UT and (perhaps) away from TAMU. The surge in the number of applications after 1998 reduced the admissions slots available to non-top-decile students at UT, where the growth of rank-eligible applicants rose appreciably, yet did not alter the test score gaps between underrepresented minority students (URMs, i.e., blacks, Hispanics, and Native Americans) and their white and Asian American classmates who actually enrolled. At Texas A&M, the test score gap between enrolled minority and non-minority students narrowed slightly.

By comparison, the change in college admission regimes appears to have had a more substantial impact on the test score attributes of applicants to institutions less selective than either UT or TAMU. Notably, the SAT/ACT scores of applicants substantially increased at these institutions. Moreover, Texas Tech University, which is slightly less selective than either UT or TAMU, experienced both a large increase in the test scores of their applicants and a large *decrease* in the share of their applicants who were in the top-decile of their high school classes. Thus, it appears that students ineligible for the automatic admissions guarantee shifted their applications towards less selective institutions.

In the next section, we develop a model to theoretically predict the changes in applicant pools. We then describe our empirical methods for analyzing these changes, discuss our administrative data, and present the results. The concluding section discusses the policy implications of key findings.

2. Model Predicting Changes in Applicant Pools

Despite their intended goals, social policies often are imbued with ambiguous theoretical implications because single-minded objectives, such as restoring diversity at selective college campuses, neglect factors that can produce formidable unintended consequences. The Texas Top-10% policy is a case in point. In their zeal to protect the hard-won diversity at the public flagships, legislative architects ignored several important factors that influence college enrollment, notably: (1) growth in the college-age population; (2) the carrying capacity of the State's 4-year post-secondary system; and (3) the political significance of disregarding SAT scores for rank-eligible students in light of the consequences of rising competition for a fixed number of slots at the public flagships.

The demography of higher education in Texas is notable because the number of public high school graduates rose 33 percent between 1997 and 2005, the period when affirmative action was judicially banned and the Top-10% law implemented. This increase compares with only 19 percent growth in the number of public high school graduates in the rest of the nation.⁶ As important, this rapid growth was accompanied by an equally profound change in the ethno-racial make-up of graduates. Despite their above-average drop-out rates, the Hispanic share of high school graduates rose from 29 to 35 percent of the total, while the white share dropped from 56 to 48 percent (Texas Education Agency, 1995; 2005).

⁶Authors' calculation based on data in the *Digest of Education Statistics* (Snyder and Hoffman 2000 and Snyder, Dillow, and Hoffman 2007) squeeze" on the change in admission regimes, rather than changes in supply and demand (Tienda and

Even if the probability of applying to college did not change over time, these shifts imply growth in the demand for college access, and potentially in the composition of applicants. Not only did the expansion of higher education in Texas fail to keep pace with the growth of the high school graduates, but the state also witnessed a shift in the composition of college enrollment. Before the judicial ban on affirmative action was imposed, enrollment in 2-year institutions surpassed that in 4-year institutions (Tienda, 2006). Thus, as overall demand for college surged, applications rose at both 2- and 4-year institutions; moreover, demand for slots at 4-year institutions was further intensified by community college transfer students seeking to complete baccalaureate degrees. As the most selective public 4-year institution located in the cosmopolitan state capital, the UT-Austin campus received a disproportionate share of students qualified for automatic admission. Many have incorrectly blamed the “college Sullivan, 2009).⁷

If affirmative action was deemed unacceptable because it gave preference to underrepresented minority students who averaged lower standardized test scores than their white and Asian counterparts, the Top-10% law has been criticized for privileging high-performing students who graduate from low performing schools. High schools differ in their college-going traditions and ethno-racial as well as socioeconomic composition; therefore the direct and indirect impacts of the law are unclear. For students who are in the top-decile of their class, the policy change will produce two effects. First, because the Top-10% law guarantees admission to any Texas public, post-secondary institution, for rank-eligible students who prefer to attend one of the public flagships, we should observe a shift of applications away from other institutions to UT and TAMU. Presumably this effect will be largest for students with middling SAT/ACT scores, who, in the absence of the policy changes, may not have expected to be admitted and thus may not have applied.⁸ Second, given both the pecuniary and non-pecuniary cost of application and the elimination of admissions uncertainty, top-decile students should be less likely to apply to more than one in-state, public university.⁹ This second effect may lower the number of applications by top-decile students to the flagship institutions, as there would be little need to apply to both UT and TAMU. These hypothesized effects imply a decline in the number of top-decile students applying to less selective institutions, but an ambiguous change in the number of applications from rank-eligible students to the flagships.

Given the judicial ban on affirmative action imposed by the *Hopwood* decision, the effects of the Top-10% law on application behavior will likely vary by race/ethnicity for students not eligible for the admission guarantee, and are potentially ambiguous for underrepresented minority applicants.¹⁰ As Long (2004) shows formally, the elimination of affirmative action could either increase or decrease the number of applications a minority student sends to selective institutions. On the one hand, underrepresented minority students (URMs) who do not qualify for automatic admission may not apply to the most selective institutions if they perceive a low likelihood of admission. On the other hand, minority students could increase

⁷For example, growing dissatisfaction with the Top-10% law since 2002 has focused on the saturation of UT with automatically admitted students, which was a direct outcome of the provision that allowed students to select their campus, with no cap on the number of students per institution.

⁸Most studies find that applicants have a preference for institutions whose median student has a higher SAT/ACT score than their own. For example, Fuller, Manski, and Wise (1982) find that a student's preference for enrolling in a college rises with the institution's median SAT score up to a point, and then declines, with the utility-maximizing SAT level being above the student's own SAT score. Using data from a sample of students with high class ranks, Avery et. al. (2004) find that they typically chose to enroll in a college whose median SAT was above the average median SAT of the institutions where they were admitted. That is, when given a choice, students enrolled in institutions with higher SAT peers.

⁹They may still apply to more than one in-state, public university if they are unsure of their preferences or need to await financial aid information before making their enrollment decision.

¹⁰Using the same data, Long and Tienda (2008) find significant preferences given to black and Hispanic applicants at UT-Austin and Texas A&M in the pre-*Hopwood* years.

the number of applications submitted to the most selective institutions in hopes of raising the chances of acceptance by one of them. Thus, the effect of the policy change on the number of applications sent by non-top-decile URM students to the flagship institutions is theoretically ambiguous.¹¹ Because students with uncertain admission prospects have greater incentive to apply to so-called “safety” schools, they will likely also submit multiple applications to other in-state, out-of-state, and private institutions. The net effect on application behavior of white and Asian American non-top-decile students also is ambiguous: the elimination of affirmative action modestly increases their admission probability to the flagships, but the Top-10% program potentially crowds them out by reducing available slots. Thus, their response is unclear. Table 1 summarizes these predictions.

In addition to shifts in the ethno-racial composition of the applicant pools, changes in admission policies will potentially also change the distributions of applicants’ SAT/ACT scores at Texas public universities. Because test scores are disregarded for students who qualify for automatic admission, the greatest beneficiaries of the shift from affirmative action to the percent plan are top-decile graduates with low SAT/ACT scores.¹² Unlike the percent plans implemented in Florida and California, the Texas percent plan allows students to select which public institution to attend if they qualify for automatic admission. Assuming that students generally prefer more selective over less selective institutions, selective institutions should witness an increase in the number of applicants with below median SAT/ACT scores.¹³ This admission boost should be greatest for white and Asian top-decile graduates with test scores below their preferred institution’s median score. Conversely, black and Hispanic top-decile students with low SAT/ACT scores will receive a smaller net boost in their admission probability because they were the main beneficiaries of affirmative action. Taken together, these changes indicate a shift in the distribution of applicants to the flagship universities towards those with lower SAT/ACT scores.

How changes in admission policies alter the distributions of applicants’ SAT/ACT scores at less selective Texas public institutions is unclear. On the one hand, non-top-decile students with higher SAT/ACT scores may be inclined to apply to less selective institutions if they perceive themselves to be crowded out of the public flagships by students eligible for the guarantee. This effect should be most pronounced for black and Hispanic students who also lose the edge provided by affirmative action. On the other hand, because some top-decile students, many of whom will have high SAT/ACT scores, will shift their applications toward the flagships and away from the less selective institutions, the overall effect on the SAT/ACT distributions of the less selective institutions is ambiguous. To estimate net impacts of the theoretically countervailing effects potentially triggered by changes in Texas college admission regimes, we use administrative data on applicants to seven Texas public institutions over a 10-year period that spans three admission regimes. The next section discusses the methodology used to estimating these distributional shifts in the applicant pools.

¹¹As an empirical matter, Long (2004) presents evidence that a higher likelihood of acceptance increases the number of score reports a student will send to a particular selectivity-level of college. This result implies that the elimination of affirmative action will prompt non-top-10 percent minorities to decrease their number of applications sent to the most selective colleges, and have the reverse effect for white and Asian American students.

¹²Although standardized test scores are disregarded for purposes of admission for rank-eligible applicants, students must take the exams and submit scores for their applications to be considered complete.

¹³Deliberate recruitment of top performing students from high schools with low college going traditions (designated Longhorn and Century Scholar high schools) coupled with explicit disregard of the test scores also will likely reduce average test scores.

3. Methods for Estimating the Changes in the Distributions of Student Characteristics

Our main interest is ascertaining whether and how the distribution of student attributes changed after the *Hopwood* decision that prohibited consideration of race and ethnicity in college admissions decisions and the implementation of the Top-10% policy. Therefore, we focus on comparisons of the distributions of applicants for the years 1996 and earlier with those of 1998 and later. The Fifth Circuit Court of Appeals *Hopwood* decision was delivered on March 18, 1996, by which time applications for the entering class in the fall of 1996 were submitted and mostly adjudicated. The *Hopwood* decision was in full force for the entering class in the fall of 1997, and the Top-10% policy was in force for the entering class in the fall of 1998. Thus, the comparison of the period 1996-and-earlier with 1998-and-later permits a full accounting of the consequences of changes in admission regimes. We refer to these periods as “pre-*Hopwood*” and “Top-10%”. Because the growth and diversification of the college-eligible population was underway since before the *Hopwood* decision, we also test for differences in applicant characteristics between the years 1994 and earlier with 1995/1996, and discuss whether there appeared to be a trend in applications during the pre-*Hopwood* years.

To estimate and plot distributions of SAT/ACT scores and class ranks of applicants, we derive kernel density estimators for all students and separately for URMs and non-URMs at each university for the pre-*Hopwood* and Top-10% periods.¹⁴ ACT test scores were converted into their equivalent SAT test score values,¹⁵ and for students who took both tests we use the higher of the two scores.¹⁶ We discuss the shape of each distribution, noting first whether it changed and if so, identifying in what part of the distribution the college gained or lost applicants. The Kolmogorov-Smirnov test allows us to test the hypothesis that the pre- and post-policy distributions are equal. Following Hedges and Nowell (1999), for both minority and non-minority students, we compute the shares among the bottom-20 percent, top-half, and top-20 percent of applicants to each university in each period. By comparing these shares across racial/ethnic groups, we establish whether the qualification gaps for

¹⁴Kernel density estimation is a non-parametric method of estimating a probability density function. In essence, a kernel density estimator smoothes a histogram by moving the window width continuously across the x-axis. (For an introduction to kernel density estimation, see http://en.wikipedia.org/wiki/Kernel_density_estimation). For the SAT distribution, we use an Epanechinov kernel with the following bandwidth proposed by Silverman (1986): $2.34 \times \min\{\text{Standard Deviation of SAT/ACT scores, Interquartile Range of SAT/ACT scores}/1.34\} \times n^{-1/5}$, where n is the number of observations. Because the class rank percentile distribution is highly skewed, we use an adaptive Epanechinov kernel estimator. See Silverman (1986), Pagan and Ullah (1999), and Van Kerm (2003).

¹⁵ACT 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. This conversion table is valid for SAT scores after the College Board “re-centered” scores upwards in 1996, therefore we have re-centered prior year SAT scores before using this conversion. For UT-Pan American, UT-Arlington, UT-San Antonio, Texas A&M Kingsville, and Texas Tech, the data only include the sum of the SAT 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). For the first four institutions above, using pre-1996 data for applicants with both SAT and ACT scores, we regressed the students’ ACT scores on their combined SAT scores and SAT scores squared and cubed. We then predicted the students’ ACT scores using their SAT scores and selected the higher value. We then converted the higher value into its re-centered SAT-equivalent value. However, Texas Tech only included data for either the student’s SAT or the ACT score, but not both. Thus, 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 re-centered 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.

¹⁶Although we have no evidence that the Texas universities examined used the higher of the scores, this procedure is 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). Given this widespread practice, it seems reasonable to assume that most colleges use the higher value of the SAT and ACT score in making their admissions decisions.

underrepresented minorities increased or decreased.¹⁷ We repeat these same analyses using students' high school class ranks.¹⁸

4. Data

Data for the analysis come from individual administrative application records at the seven institutions listed in Table 2.¹⁹ These data were collected by the Texas Higher Education Opportunity Project (THEOP), a multi-year study designed to investigate students' college planning and enrollment behavior, and universities' administrative behavior in response to the *Hopwood* decision and the Top-10% law. The study includes longitudinal surveys of students as well as the administrative data used here.²⁰

As revealed by the average SAT/ACT scores of applicant pools, the universities we study vary in their admission selectivity from UT-Austin, which is the most selective public institution in the state and rejected nearly one-third of its applicants, to Texas A&M-Kingsville, which admitted nearly all applicants with high school credentials. The initial study design sought to select public institutions from the nine selectivity tiers used by Barron's, but not all institutions contacted were able to participate for myriad reasons ranging from burdensome databases to inadequate personnel to comply with the request.²¹ Nonetheless, the seven institutions included in this paper's analysis received 46 percent of the total applications and 47 percent of enrollees attending all public Texas four-year institutions in 1998. Thus our results should be broadly representative of changes throughout the state.²²

Table 3, which summarizes the data, reveals a tremendous increase in the number of applications submitted to these seven institutions. From 1998 to 2006, the total number of applications to these institutions rose 59 percent — far exceeding the 33 percent growth in the number of Texas high school graduates in the state during this period. This increase in applications might reflect the secular national trend in students submitting more applications rather than a response to the policy change (Breland et al., 2002). Most universities in our data accommodated the growth in applications by increasing the number of admitted students, as evident in the modest declines in the share admitted for each institution. Between 2002 and 2006, however, acceptance rates fell at UT-Austin (from 76 to 58 percent) and UT-Arlington (from 89 to 77 percent).²³

Although the share of underrepresented minorities in applicant pools dipped in the year immediately following the *Hopwood* decision at the three most selective public institutions

¹⁷We would like to thank Eric Grodsky and Michal Kurlaender for suggesting this analysis..

¹⁸For UT-Austin, Texas Tech, and UT-San Antonio, the data included indicators of student's class rank percentile within ranges (e.g., 75th–90th percentile) when precise data on the student's class rank and/or class size was unavailable. We smoothed these students into the appropriate class rank percentile ranges (details are available from the authors). The shares of students whose class rank was imputed are as follows: UT-Austin (2.8%), Texas Tech (3.7%), and UT-San Antonio (5.0%). Given the small shares of students with these imputations, the results are highly robust to omitting these students.

¹⁹Mean SAT/ACT was averaged across all admitted students for the years available. For UT-San Antonio this measure is an average over enrolled students in the years 1990–97 and admitted students in the years 1998–04. For Texas A&M Kingsville this measure is an average over enrolled students in the years 1992–95 and admitted students in the years 1996–02.

²⁰Although the longitudinal survey data includes a broader set of student background characteristics than the administrative data, it lacks information for cohorts prior to 1998, hence are not helpful for discerning what factors figure into students decisions to apply to specific institutions. For further information, see: <http://www.texastop10.princeton.edu>.

²¹Barron's selectivity categories range from 9 (most competitive) to 1 (non-competitive). UT is ranked 7, TAMU 5 or 6, depending on the year. Several institutions do not require SAT/ACT scores (recommended only), such as A&M-Kingsville and UT-Pan American. Depending on the year, their Barron's rank ranged between 1 and 2.

²²Author's calculations based on data from the Texas Higher Education Coordinating Board (<http://www.txhighereddata.org/Interactive/AppAccEnr.cfm>, accessed April 2009).

²³Data for 2002 from the THEOP administrative files. Data for 2006 from the Texas Higher Education Coordinating Board (<http://www.txhighereddata.org/Interactive/AppAccEnr.cfm>, accessed September 2007).

considered, URM representation in the applicant pool rebounded to pre-*Hopwood* levels at UT-Austin and Texas Tech, but declined at Texas A&M, despite growth in the URM share of high school graduates in the state of Texas (Long 2007). Once the Top 10% law was in force, the URM share of applicants at UT and Texas Tech rebounded. There is considerable speculation about the continued decline in minority representation at TAMU, but little consensus.²⁴

The patterns of changes in the share of URMs who were accepted (shown in the 4th panel of Table 3) roughly mirror patterns for all students (2nd panel). During the pre-*Hopwood* years, URMs enjoyed a higher probability of admission at both public flagships (unconditional on their attributes) compared with whites and Asians. Beginning in 1997 — the year the judicial ban was fully in force and before the percent plan had gone into effect — URMs faced an unconditional admission disadvantage at both institutions. Although the admission disadvantage persists at TAMU, there have been no substantial differences in unconditional admissions rates of URMs and non-URMs at UT-Austin since 2000. Unconditional admission rates of black and Hispanic applicants to Texas Tech and UT-Arlington were consistently lower than those of white and Asian applicants, and their admission gap widened over time. The admissions rates for URM and non-URM applicants at UT-Pan American, with much less competitive admissions than Texas Tech and UT-Arlington, are nearly equivalent in each year, while UT-San Antonio and Texas A&M Kingsville admitted nearly all applicants.

The fifth panel of Table 3 shows the share of applicants (with non-missing class rank percentile) who graduated in the top-decile of their high school class. Annual trend data (collapsed in Table 3 for parsimony) reveal that after the implementation of the Top-10% policy, the share of top-decile applicants to UT-Austin crept upwards from 40 to 45 percent, reversing a downward pre-policy trend. At Texas A&M, the share of top-decile applicants declined slightly from 40 to 37 percent, while at Texas Tech, the top-decile share dropped precipitously from 24 to 17 percent. Thus, it appears that top-decile students who would normally have applied to less selective institutions began shifting their applications towards UT-Austin.

Finally, the last panel of Table 3 shows that the average SAT score of Texas high school students rose steadily from around 1,000 in the early-1990s to around 1,020+ in the mid-2000s.²⁵ However, the average ACT score remained relatively constant over this period.²⁶ Thus, we should expect to see, at most, modest increases in the SAT/ACT scores of applicants to these universities. The following sections analyze changes in application behavior among institutions that differ in the selectivity of their admissions and test the theoretical predictions outlined in Table 1. Specifically, we expect to see a decline in applications to less selective Texas public institutions by top-decile students, and an increase in applications to less selective Texas public institutions by non-top-decile URM students.

²⁴Finnell (1998) discusses specific reasons why minority applications to Texas A&M fell in 1996 in response to the *Hopwood* ruling, despite the fact that the ruling did not affect admissions decisions until 1997. She notes that Texas A&M's history made it seem less friendly and welcoming for black and Hispanic students, and conjectures that a perception "that A&M would no longer be interested in diversity" (p. 73) and a fear that "support services would no longer be available" (p. 73) may have contributed to the sudden drop in URM applications.

²⁵All SAT scores for the years before 1996 have been "re-centered" to make them comparable with latter years.

²⁶Students in the state of Texas are more prone to take the SAT than the ACT. For the period 2003 to 2007, there was an annual average of 133,971 SAT and 73,440 ACT test takers in the state (authors' calculation based on data from the College Board and ACT, Inc. — see Table 2 "Sources").

5. Estimation Results

5a. University of Texas at Austin

Figure 1 displays changes in the characteristics of applicants to UT-Austin, where the “A” panels show the change in the distribution of student’s SAT/ACT scores and the “B” panels do so for the class rank distributions. The top “A” panel shows a rightward shift in the SAT/ACT score distribution. Comparing the blue solid line (≤ 1994) with the black dotted line (1995/1996) indicates that this shift occurred during the years prior to the *Hopwood* decision. Despite the modest growth in SAT scores statewide, there was no significant change in the SAT/ACT distribution after the *Hopwood* decision, as revealed by the difference between the dotted line and the red solid line (≥ 1998). Thus, if we assume that the pre-*Hopwood* trend would have continued, then the absence of a continued rightward shift during the Top-10% years suggests that the policy change is likely responsible. This result is consistent with the prediction of a decline in SAT/ACT scores for the flagship institutions (as discussed in Section 2). The two lower “A” panels compare the pre-1995/1996 period with the Top-10% period, with separate analyses for URM and non-URMs. Remarkably, there was no substantial change in the test score distribution for either group during this period.

The “B” panels of Figure 1, which portray changes in the distribution of class rank percentiles, illustrate the consequences of the Top-10% regime on application behavior. There was a clear shift in the class rank composition of applicants: the share of top-decile graduates rose while graduates ranked in the second- and third-decile of their high school classes fell. The growth in the share of top-decile applicants appears to have been driven by black, Hispanic and Native American students. Aggressive outreach programs and fellowships targeted to rank-qualified minority applicants was partly responsible for this behavior (Domina, 2007). Concomitantly, the share of white and Asian applicants ranked at or below the second-decile fell, possibly in anticipation of low admission odds.

Results reported in Table 4 support claims that the disregard of standardized test scores for rank-eligible students under the Top-10 percent regime primarily boosted the application rate of top-decile minority students. Based on applicants’ SAT/ACT scores, black and Hispanic students were greatly overrepresented among the bottom-20 percent of the applicant pool and underrepresented in the top-half during the pre-*Hopwood* period (Panel A). Consistent with the modest changes in the SAT scores distributions reported in Figure 1, the shares of URM and non-URM applicants in the test score distribution were nearly identical before and after the Top 10% policy, as indicated in the last column. By contrast, during the pre-*Hopwood* period black and Hispanic applicants were at a slight disadvantage in their class-rank percentile, but not under the Top-10% admission regime; the distributions of class rank percentiles among URM and non-URM applicants were nearly identical after 1998, as indicated by the 1.0 ratio in the last column. Thus, the class rank of URM applicants was relatively improving while their test scores were not relatively improving.

As Panel B of Table 4 shows, black and Hispanic applicants were overrepresented among admitted students with low SAT/ACT scores when affirmative action was used in admission decisions. During the Top-10% period, the share of admitted URM and non-URM students coming from the bottom-20% of the applicant pool increased. Predictably, more applicants with low SAT/ACT scores were granted admission under the Top-10% policy compared with the pre-*Hopwood* regime; however, this change involved proportionately larger shares of low-scoring white and Asian admittees than low-scoring URM admittees. The parallel analysis for matriculants, displayed in Panel C of Table 4, shows no policy impact on the SAT distribution among enrollees, but illustrates greater representation of URM students

among matriculants who graduated in the upper portion of the high school class rank percentile distribution, as intended by the law.

5b. Texas A&M University

Several studies claim note that the Top 10% law had unequal consequences at the public flagships, but do not consider how changes in application behavior ultimately contributed to enrollment outcomes (Finnell, 1998; Tienda and Sullivan, 2009). Figure 2, shows a modest rightward shift in the SAT/ACT score distribution of applicants to TAMU that cut across admission regimes. Furthermore, the rightward drift included black and Hispanic students. TAMU's gradual drop in the share of applicants from the top decile of the class rank distribution does not appear to have been precipitated by the change in admission regime, but rather a continuation of a trend underway since affirmative action was used. Thus, by contrast to UT, Texas A&M was not swamped with applications from top-decile graduates.

As shown in Table 5, the SAT/ACT score disadvantage of black and Hispanic applicants to Texas A&M during the pre-*Hopwood* period continued through the Top-10% regime. Similar to UT-Austin, black and Hispanic TAMU applicants averaged slightly lower class rank standing both before and after the judicial ban on affirmative action. These data suggest that URM applicants who were admitted to and enrolled in Texas A&M were less well prepared academically compared with their Asian and white classmates. That these disadvantages were narrowed under the uniform admission period regime was partly due to an increase in the share of white students in the bottom 20 percent of the SAT/ACT and class rank distribution.

5c. Texas Tech University

Although most assessments of the uniform admission regime have focused on the two public flagships, the rapid growth in high school graduates and growing uncertainty about the admission prospects of students not eligible for the admission guarantee had repercussions at other public institutions. Not only did the number of applications to Texas Tech double between 1995 and 2003, but the average quality also rose. As Figure 3 shows, the share of Tech applicants with scores above 1100 surged from 39 percent to 49 percent during this period, reversing a modest downward trend in standardized test scores prior to the change in admission regimes. Gains in standardized test scores are evident among white and Asian American applicants, but they are especially notable among black and Hispanic applicants to Texas Tech. The "B" panels displayed in Figure 3, which reveal a drop in the share of top-decile applicants and a concomitant rise in graduates whose class rank standing was in the 50th-70th percentiles, provide some insight into the source of the change. The decline in top-decile applicants was especially notable among white and Asian applicants. Under the Top 10% regime, it appears that Texas Tech began receiving more applications from students who would have had high chances of acceptance at one of the public flagship institutions in the pre-*Hopwood* years (especially URMs with high SAT/ACT scores), but it lost applicants whose chances of admission to the flagships increased radically with the implementation of the admission guarantee (especially highly ranked Asian and white students with low SAT/ACT scores).

Table 6 shows that URM applicants to Texas Tech were disadvantaged relative to white and Asian students based on their SAT/ACT scores under both the pre-*Hopwood* and Top-10% admission regimes, but not based on their class rank distribution. Black and Hispanic students who were admitted to and enrolled at Texas Tech had lower SAT/ACT scores during both admission periods compared with their white and Asian counterparts, although these achievement gaps narrowed over time. That is, the surge in applications from black and Hispanic students with above average test scores narrowed this achievement gap among

admitted students who ultimately enrolled. Furthermore, the class rank distributions of admitted and enrolled minority and non-minority students converged, largely owing to the decline of top-decile white and Asian applicants. Because the selectivity of admittees and enrollees depends directly on the quality of applicants, the rise in the test scores of Tech enrollees may be the result of “cascading,” namely the spillover of high-achieving students who might have preferred UT and TAMU but were crowded out by students who qualified for automatic admission.

5d. Consequences for Less Selective Universities

Not all institutions benefitted equally from the cascading of high-achieving students, as the experience of four less selective universities for which we obtained data attests. UT-Arlington, UT-Pan American (“PanAm”), UT-San Antonio (UTSA), and Texas A&M at Kingsville (“Kingsville”) accepted most applicants and did not practice affirmative action in the pre-*Hopwood* period, therefore the consequences of the *Hopwood* decision and the Top-10% policy on applications should be largely indirect. Nonetheless, these indirect effects appear to have been substantial.

Pre-*Hopwood* application data is unavailable for UTSA and Kingsville; therefore Figure 4 only reports changes in the test score distributions of applicants to UT-Arlington and UT-Pan American. The results for UT-Arlington are comparable to Texas Tech, which is not surprising because the two institutions had similar mean SAT/ACT scores among their applicants prior to the ban on affirmative action (1,037 and 1,053 in 1996, respectively). Between 1994 and 1998, the number of applications to UT-Arlington fell 21 percent (from 2,852 to 2,249). In the subsequent years, however, the applications more than doubled, exceeding 5,000 by 2002. Like Texas Tech, the surge in applications at UT-Arlington involved students with higher standardized test scores compared with the pre-*Hopwood* period. This rightward shift of the distribution of SAT/ACT scores was driven by white and Asian American applicants, which is a plausible response to the squeeze on the flagships imposed by the Top-10% policy.²⁷

By contrast, the share of black and Hispanic applicants with low test scores (< 850) rose after the implementation of the Top-10% policy; concomitantly, the share of applications from URM students whose test scores were in the 850–1,100 range fell and the share above 1,100 remained constant. This change is not due to fewer URM applicants with middling test scores; in fact, applications from URM students with test scores between 850 and 1,100 increased from an average of 447 per year (1995–1996) to 566 per year (1998–2002). That is, UT-Arlington witnessed a growth in applications from middle- and high-scoring URMs, but simultaneously experienced fast growth in their applications from low-scoring URMs, likely for reasons unrelated to changes in admission regimes.

Results not reported, but available from the authors, reveal that shifts in the SAT/ACT distributions widened the test score gap between URM and white and Asian applicants, which in turn, changed the achievement composition of both admitted and enrolled students. Thus, in light of the rising test scores of white and Asian students attending UT-Arlington, the typical black and Hispanic student on campus is relatively less well prepared for college-level work. Moreover, as the share of applicants admitted dropped from 89 to 77 percent between 2002 and 2006, UT-Arlington’s admissions became more competitive. The college squeeze set in motion by Texas’ changing demographics portends more intensified competition for access to the Arlington campus, which also appears to be a beneficiary of cascading away from the public flagships.

²⁷UT-Arlington lacks pre-*Hopwood* class rank information, so this hypothesis cannot be verified.

PanAm differs in many ways from the four institutions considered above. Located along the Mexican border, it qualifies as a “Hispanic-serving institution”: 85 percent of applicants (with non-missing race/ethnicity) were Hispanic, 8 percent were white, and 4 percent identified as “other” race. It is also one of the least selective four-year universities, having rejected only about 10 percent of applicants during the observation period. In section 2 we hypothesized that URM students with high SAT/ACT scores would be highly inclined to apply to less-selective institutions after the Top-10% policy went into effect because their admission chances at the public flagships would be diminished by both the elimination of affirmative action and the crowd-out of admission slots produced by the admission guarantee. Figure 4, which reveals that the SAT/ACT scores of PanAm applicants increased over time, particularly among Hispanics (URM mean SAT/ACT score rose from 803 in 1996 to 831 during the Top-10% years), supports this claim.

In the absence of pre-*Hopwood* applicant data for UT-San Antonio (UTSA) and Texas A&M-Kingsville (Kingsville), our analysis for these institutions is restricted to enrollees. Trends in the test score and class rank distributions of enrollees at these institutions are informative nonetheless, particularly relative to the shifts observed at more selective institutions. Because of their high admission rates, the characteristics of students admitted to less selective institutions are very similar to their applicant pools. Characteristics of their enrollees may differ from those of their admittees, however, because students often apply to multiple institutions and because financial and personal circumstances determine matriculation decisions.²⁸

The top “A” panel of Figure 5 shows a large rightward shift in the combined SAT/ACT distribution of enrollees at these four institutions shifted, reversing an opposite trend under the pre-*Hopwood* admission regime.²⁹ Importantly, the improvement in SAT/ACT scores was not confined to Asian and white enrollees, but also involved black and Hispanic students. The “B” panels of Figure 5, which display the class rank distribution for the enrollees at PanAm, UTSA, and Kingsville combined (UT-Arlington is omitted due to a lack of class rank data), demonstrates clear upgrading in the class rank distribution. This shift, which was generalized among all demographic groups, shows that growing enrollee shares at these less selective institutions hailed from above the 77th percentile of their class rank. Thus, it appears that even the least selective Texas public universities benefitted from the “cascading” underway as the college squeeze intensified and the Top-10% law redistributed access to the public flagships.

Our theoretical reasoning predicted an increase in enrollment at less selective institutions of high-ranked applicants who did not qualify for the admission guarantee. In fact, the share of second-decile applicants at these institutions rose, from 14.3 to 15.5 percent, but the share of top-decile enrollees also rose by 1.7 percentage points. This result is consistent with an overall cascading process in a state where the growth of post-secondary slots lagged well behind the surge in demand for college (Tienda and Sullivan, 2009). Auxiliary analyses (available on request) reveal that relative to their classmates in the pre-*Hopwood* period, black and Hispanic enrollees at UTSA averaged lower SAT/ACT scores than white and Asian students, yet averaged a higher class rank percentile. Predictably, black and Hispanic UTSA enrollees’ test score disadvantage widened even as their class rank percentile advantage narrowed under the Top-10% regime. Apparently an influx of higher-scoring white and Asian applicants has contributed to the test-score disparities between URM and

²⁸Between 1998 and 2006, 43 (45) percent of students admitted to UTSA (Texas A&M Kingsville) subsequently enrolled (Authors’ calculations based on data from the Texas Higher Education Coordinating Board reports on “First-time Undergraduate Applicant, Acceptance, and Enrollment Information” (<http://www.txhighereddata.org/Interactive/AppAccEnr.cfm>, accessed November 30, 2007)).

²⁹Plots of these distributions for the individual institutions are available from the authors.

non-URM students at the San Antonio campus. URM enrollees at Kingsville were at a sizable disadvantage compared with white and Asian classmates based on test scores and a modest disadvantage based on class rank percentile in both the pre-*Hopwood* and Top-10% periods, and there was little change in these attributes over time.

Geography partly explains the observed shifts in the composition at UTSA, which is located about an hour from the UT-Austin campus. As the flagship campus has become increasingly saturated with top-decile admits, the admission squeeze has tolled particularly hard on prospective applicants that share feeder schools. In fact, both UTSA and Austin Community College have become back-up institutions for students who desire to attend UT-Austin, but do not qualify for the admission guarantee. Depending on space limits, UTSA students may transfer to the Austin campus and community college transfers were usually guaranteed. These practices are changing as UT has become saturated with automatically admitted students, crippling the ability of admissions officers to accept transfer students (Grissom, 2009; Haurwitz, 2009). The observed shifts in the SAT and class rank distributions at UTSA are consistent with the scenario that students crowded out of their preferred institution by top-decile admits are applying to and attending less selective institutions.

5e. Alternative Hypotheses for the Observed Shifts in Applications

Interpreting the observed shifts in applications warrants caution because many concurrent events may have affected applicants' post-secondary choices. For example, the economy went into a mild recession between March and November of 2001.³⁰ This recession may have shifted students' applications away from the more expensive flagship institutions and towards less expensive (and less selective) institutions. However, given positive correlation between SAT/ACT test scores and parental income (Everson, et al., 2006), we would expect to see a greater shift of applications from students with lower test scores who would be more affected by the recession than by higher test score students. This implies a *rightward* shift of the applicant test score distribution at the flagship universities, which was not observed.

Second, changes in the relative fortunes of athletic departments at these universities may have shifted applicant choices. During the past 15 years, Texas Tech's football team has steadily improved, while Texas A&M's football team has deteriorated from a once dominant program to a now average performer. Texas Tech's basketball program also dramatically improved with the hiring of Bobby Knight in 2001. It is conceivable that Texas Tech's applications may have surged as a result, but there is no reason to expect that improvements in Tech's athletic success would shift the test score distribution to the right while simultaneously *lowering* the share of top-decile applicants. Moreover, performance of both UT-Austin's football and basketball programs improved over our observation period, yet, and in contrast to Tech, the assent of standardized test scores at UT-Austin stagnated under the Top-10% regime. Appropriate caution is warranted in assuming that all movements in the applicant distributions are due to changes in admissions policy, particularly in light of the intensifying college squeeze, yet the aggregate shifts are, in the main, consistent with our theoretical predictions.

6. Conclusion and Policy Implications

The replacement of affirmative action with an admission guarantee for students who graduate in the top decile of their high school class appears to have altered college application behavior and admission outcomes at Texas public institutions throughout the state. As Texas students modified their application portfolios in response to the ban on

³⁰National Bureau of Economic Research, <http://wwwdev.nber.org/cycles/cyclesmain.html> (accessed December 8, 2008).

affirmative action and the admission guarantee for top-ranked graduates, average test scores of applicants to UT-Austin stopped increasing while those of applicants to less selective public institutions rose. This result follows from the provisions of the Top-10% law, which not only disregards test scores for graduates eligible for automatic admission, but also permits qualified applicants to choose which public institution to attend.

The provision allowing rank-eligible students to select their postsecondary institution appears to have altered college application portfolios of high achieving students who fall below the 10 percent threshold in the class rank distribution and perceive their admission prospects to be low at the most selective in-state campuses. That the average SAT scores and median class rank of applicants rose at the less competitive institutions under the Top-10% regime supports this claim, which is consistent with a crowding hypothesis. UT-Austin experienced rather acute crowding due both to a substantial rise in the number of applicants (experienced to varying degrees at all institutions we examined) and a shift in institutional preferences of top-decile graduates. For the incoming class of 2008, 81 percent were automatically accepted (Schevitz, 2008). Texas A&M has not been equally saturated with applicants eligible for automatic admission partly because of its less desirable geographic location and partly because of an institutional legacy that was deemed less appealing to minority students (Schmidt, 2005).³¹

Despite clear evidence that the changed admission regime has impacted all Texas public institutions, media coverage and political discourse has largely focused on the consequences of the admission regime change for *actual* enrollment, primarily at the two public flagships, presuming that observed changes are a *direct* consequence of the law. Whether and how much the Top-10% policy was responsible for changes in the ethno-racial composition of the public flagships, as intended by its architects, is less clear because several other forces that influence college-going behavior have changed simultaneously. Not only did high school graduates become more ethnically diverse, but their numbers increased faster than the expansion of the four-year college system. By itself the latter would accentuate crowding, and assuming that proportionate numbers of minorities qualified for the admission guarantee, gradually diversify college campuses. In fact, campus diversity depends not only on who is admitted, but who actually applies and ultimately, who actually enrolls. Application and enrollment decisions are made by individual students and their parents, whereas admission decisions are governed both by the Top-10% law and for students who do not qualify for the guarantee, admissions officers.

Table 7 summarizes the composition of in-state student applicant, admission and enrollee pools at the two public flagships before the *Hopwood* decision and under the Top-10% admission regime. The uneven results are striking. At Texas A&M, the share of applications from black and Hispanic students fell slightly, while those from white and Asian students rose. White students comprised an increasing share of admittees and enrollees at Texas A&M. In contrast, the share of applications received from black and Hispanic students were not significantly changed at UT-Austin. White students experienced an increase in their raw numbers, but a decline in their share of applicants, admittees, and enrollees. The decline in white students' share of enrollees at UT-Austin was offset by the large rise in Asian students' share. Thus, the competition for a fixed number of slots at UT-Austin along with the new admissions policy largely advantaged Asian students at the expense of white students.

³¹Until 1963, Texas A&M was a military-training college that was off-limits to black and female students, and compared to the Austin campus, is characterized by a more conservative culture than UT (Schmidt, 2005).

If enrollment diversity at the public flagships is the intended goal of the uniform admission law, it falls short of this objective; the data reported Table 7 show declining shares of underrepresented minority students at both institutions (significantly so at Texas A&M). Although the share of white students declined at UT-Austin, the 2.8 percentage point drop was largely due to an increase in enrollment of Asian origin students, not blacks or Hispanics. At Texas A&M, enrollment shares of black and Hispanic students fell relative to their pre-*Hopwood* levels. Thus, the Texas A&M campus is less diverse under the uniform admission regime compared to the pre-*Hopwood* period. Former president Gates claimed that the main problem “was not so much that too few minority students were applying or gaining admission, but that too few were choosing to enroll” (Schmidt, 2005). Ultimately, legislators will seek results on the desired outcome — enrollment.

From a policy perspective, the reasons for the uneven impact of a uniform admission regime at UT and Texas A&M warrants further scrutiny. Our results demonstrate that a one-size-fits-all solution is unrealistic, particularly in such a dynamic demographic context. Rather than dismantle the law altogether, as some critics have requested, it is necessary to understand the mechanisms that undergird the unequal application and enrollment outcomes. Three considerations seem especially relevant in light of the changing demography of Texas’s college-eligible population, namely (1) the carrying capacity of the state’s higher education system; (2) the reasons rank-eligible students do not matriculate in their desired institution; and (3) the significance of eliminating the SAT from consideration in college admissions for students who qualify for automatic admission.

Regarding the carrying capacity, the key question is whether the state’s higher education system is able to accommodate the growing number of high school graduates. More specifically, if every top-decile graduate applied to a four-year institution, would there be a sufficient number of slots? According to TEA, there were approximately 225 thousand public high school graduates in 2003, which implies that around 22 thousand students qualified for automatic admission to a public university in Texas. If everyone sought admission to either UT or Texas A&M, their combined carrying capacity would have been exceeded. Given recent increases in the number of high school graduates, the relevant policy question is whether 10 percent is a reasonable threshold for guaranteed admission. How the architects of the law arrived at the 10 percent cut point for the admission guarantee remains a mystery, but it is reasonable to ask whether the guaranteed admission threshold might be pegged to the carrying capacity of the system. Perhaps 5 or 7 percent is a more reasonable cut-off in light of the growing demand for access to public 4-year institutions in Texas. The growing saturation of UT with automatically admitted students is not sustainable; the policy challenge is to devise a way to ration slots throughout the four-year postsecondary education system that achieves the twin goals of broadening educational opportunity across a broader spectrum of the population while protecting some degree of institutional flexibility to shape the freshman classes along many dimensions.

That students have changed their application portfolios in response to the uniform admission regime suggests some broadening of educational opportunity across the state. This claim finds support in the growing number of high schools represented among the freshman classes at UT and Texas A&M. This outcome, however, was not simply a direct consequence of the law, but rather was augmented by the strong outreach programs developed by UT and Texas A&M to recruit top performing students from high schools that traditionally sent few students to their campuses (Domina, 2007). Outreach is perhaps a necessary condition to encourage applications of underrepresented minority groups, but it is insufficient to raise their enrollment without commensurate financial aid. Given that minority students are more likely to attend poor schools, it is unsurprising that they report cost and availability of financial aid as the most salient factors influencing their decision to

enroll at a non-selective post-secondary college (Tienda and Niu, 2006). In response, Texas A&M has increased its attention to financial aid counseling in tandem with its intensified outreach efforts to make financial aid counter-offers to talented students (Schmidt, 2005). These multi-pronged recruitment efforts reinforce claims that the potential of the Top-10% law to diversify college campuses depends on complementary supports to qualified students.

Finally, although it is inappropriate to attribute all changes in application and enrollment behavior to the modified admission policy, the SAT and class rank distributional shifts were likely driven by the admission guarantee, and specifically its influence in redistributing access to the public flagships. Prior to the Top-10% policy, UT-Austin and Texas A&M had admissions policies that led to the acceptance of nearly all applicants who were in the top-decile of their high school classes (Tienda and Niu, 2004). Thus, in one sense the only unique effect of the Top-10% law was to make the *de facto* policy transparent. This transparency had broad consequences, evident in the growing shares of top-decile high school graduates, particularly highly ranked black and Hispanic graduates, who applied to UT-Austin. These results suggest that making admissions policies more transparent can greatly shift the composition of applicants, particularly when complemented with aggressive outreach strategies.

Embedded in the seemingly benign change from a *de facto* to a *de jure* policy is a more radical provision to disregard altogether the standardized test scores of rank-eligible applicants (Tienda, Alon and Niu, 2009). Perhaps even more than the admission guarantee *per se*, this provision, along with the provision that allows students to select their preferred campus within the UT and A&M systems, may be largely responsible for the observed changes in application and enrollment behavior. Without considering changes at all institutions in the two public post-secondary systems, we can not unequivocally disentangle direct and indirect consequences of the law from demand and supply shifts in the post-secondary market. Nevertheless, the evidence we assemble suggests that students' application responses to the change in the incentives caused by the new admissions rules can profoundly affect the composition of the student bodies, even at institutions not directly affected by the policy changes.

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Figure 1.
Changes in Characteristics of Applicants to UT-Austin

Figure 2.
Changes in Characteristics of Applicants to Texas A&M

Figure 3.
Changes in Characteristics of Applicants to Texas Tech

Figure 4.
Changes in Characteristics of Applicants to UT-Arlington and UT-Pan American

Figure 5.
Changes in Characteristics of Enrollees at UT-Arlington, UT-Pan American, UT-San Antonio, and Texas A&M at Kingsville

Table 1

Theoretical Predictions for Changes in the Total Number of Applications Sent to Various Types of Universities, by Racial Group and Top-10% Status

Type of Applicant	More Selective Texas Public Universities (e.g. UT-Austin, Texas A&M)	Less Selective Texas Public Universities	Private and Out-of-Texas Universities
URM, Top-10%	Ambiguous	Decrease	Decrease
URM, Not-Top-10%	Ambiguous	Increase	Increase
Non-URM, Top-10%	Ambiguous	Decrease	Decrease
Non-URM, Not-Top-10%	Ambiguous	Ambiguous	Ambiguous
Top-10% (All Students Combined)	Ambiguous	Decrease	Decrease
Not-Top-10% (All Students Combined)	Ambiguous	Ambiguous	Ambiguous

Note: "URMs" = "Underrepresented Minorities (blacks, Hispanics/Mexicans, and Native Americans). "Non-URMs" = Whites and Asian Americans.

Table 2

Universities' Administrative Records

	Data Available For:			
	<u>Applicants</u>	<u>Admittees</u>	<u>Enrollees</u>	<u>Mean SAT/ACT</u>
Univ. of Texas at Austin	1990–03	1990–03	1990–03	1,233
Texas A&M Univ.	1992–02	1992–02	1992–02	1,185
Texas Tech Univ.	1989–03	1989–03	1989–03	1,094
Univ. of Texas at Arlington	1994–02	1994–02	1994–01	1,040
Univ. of Texas at San Antonio	1998–04	1998–04	1990–04	979
Texas A&M Univ. at Kingsville	NA	1996–02	1992–02	883
Univ. of Texas-Pan American	1995–02	1995–02	1995–02	841

Table 3

Changes in the Characteristics of Applicants at Selected Texas Public Universities, and Changes in the Average SAT and ACT Scores of Texas High School Students

	Average Across the Following Application Years			
	<=1994	1995/1996	1997	>=1998
Number of Applications				
UT-Austin	14,418	15,728	14,571	17,797
Texas A&M	13,384	14,761	14,914	15,688
Texas Tech	6,056	6,599	7,545	10,068
UT-Arlington	2,852	2,690	2,494	3,824
UT-Pan American		6,399	4,907	5,407
UT-San Antonio				6,618
TX A&M-Kingsville				1,999
Share Accepted				
UT-Austin	71	69	78	68
Texas A&M	75	75	78	73
Texas Tech	75	81	73	75
UT-Arlington	91	88	96	91
UT-Pan American		89	90	91
UT-San Antonio				99
TX A&M-Kingsville				100
Share of Applicants who are URMs*				
UT-Austin	20	19	18	19
Texas A&M	18	19	17	16
Texas Tech	20	19	18	19
UT-Arlington	26	27	28	32
UT-Pan American		88	84	82
UT-San Antonio [‡]	39	47	49	57
TX A&M-Kingsville [‡]	72	71	77	73
Share of URMs* Accepted				
UT-Austin	74	68	71	66
Texas A&M	85	83	72	69
Texas Tech	68	75	59	61
UT-Arlington	87	81	94	85

Average Across the Following Application Years					
	<=1994	1995/1996	1997	>=1998	
UT-Pan American		89	90	91	
UT-San Antonio				99	
TX A&M-Kingsville				100	
Share of Applicants in the Top-10% of HS Class (among those with non-missing class rank percentile)					
UT-Austin	42	41	39	43	
Texas A&M	41	39	40	38	
Texas Tech	21	22	24	20	
UT-Arlington					
UT-Pan American		10	10	12	
UT-San Antonio [‡]	15	15	15	16	
TX A&M-Kingsville [‡]	11	11	10	15	
Average SAT Score (Math + Verbal)					
	1,001	1,012	1,016	1,020	
Average ACT Composite Score					
	20.2	20.2	20.2	20.3	

Notes:

* “URMs” = “Underrepresented Minorities (blacks, Hispanics/Mexicans, and Native Americans).”

[‡] For UT-San Antonio and TX A&M-Kingsville, values in bold text reflect enrollees, rather than applicants.

Sources:

Non-Italicized data on applications: THEOP administrative data files; Italicized data on applications: Texas Higher Education Coordinating Board (<http://www.txhighereddata.org/Interactive/AppAccEnr.cfm>, accessed September 2007); SAT data: College Board (http://www.collegeboard.com/about/news_info/cbsenior/yr2007/reports.html, accessed September 2007); ACT data: ACT, Inc. (<http://www.act.org/news/data.html>, accessed September 2007).

Table 4

Relative Disadvantages of Underrepresented Minorities Among Applicants, Admittees, and Enrollees at UT-Austin

		Pre-Hopwood (1995/1996)			Top-10 (≥ 1998)		
		URMs	non-URMs	Ratio	URMs	non-URMs	Ratio
<i>Panel A: Applicants</i>	Share in SAT/ACT Distribution						
	Bottom-20%	45.9	15.9	2.9	44.0	15.4	2.9
	Top-Half	24.9	55.2	0.5	26.0	55.2	0.5
	Top-20%	6.5	21.2	0.3	6.8	22.1	0.3
	Share in Class Rank Percentile Distribution						
	Bottom-20%	23.8	19.0	1.3	20.3	19.8	1.0
	Top-Half	47.5	50.6	0.9	51.1	49.7	1.0
	Top-20%	18.4	20.1	0.9	20.5	19.6	1.0
<i>Panel B: Admittees</i>	Share in SAT/ACT Distribution						
	Bottom-20%	29.4	4.9	6.0	35.7	9.2	3.9
	Top-Half	34.6	70.7	0.5	33.1	65.3	0.5
	Top-20%	9.1	28.6	0.3	9.3	28.3	0.3
	Share in Class Rank Percentile Distribution						
	Bottom-20%	11.7	7.1	1.6	8.3	8.8	0.9
	Top-Half	60.5	64.3	0.9	70.1	63.9	1.1
	Top-20%	24.6	26.8	0.9	29.2	25.7	1.1
<i>Panel C: Enrollees</i>	Share in SAT/ACT Distribution						
	Bottom-20%	38.5	11.0	3.5	39.7	11.2	3.5
	Top-Half	27.1	58.9	0.5	27.8	59.9	0.5
	Top-20%	6.6	20.1	0.3	6.6	23.0	0.3
	Share in Class Rank Percentile Distribution						
	Bottom-20%	22.0	15.5	1.4	10.0	11.4	0.9
	Top-Half	48.0	53.9	0.9	66.7	59.3	1.1
	Top-20%	16.4	19.9	0.8	25.7	22.2	1.2

Note: A student's position in the relevant distribution is determined on a year-by-year basis using data from all applicants. Students with missing values for the relevant variable are omitted from the share calculations.

Table 5

Relative Disadvantages of Underrepresented Minorities Among Applicants, Admittees, and Enrollees at Texas A&M

		Pre-Hopwood (1995/1996)			Top-10 (≥ 1998)		
		URMs	non-URMs	Ratio	URMs	non-URMs	Ratio
<i>Panel A: Applicants</i>	Share in SAT/ACT Distribution						
	Bottom-20%	42.7	17.8	2.4	40.1	18.0	2.2
	Top-Half	30.0	54.1	0.6	30.2	52.5	0.6
	Top-20%	8.9	21.6	0.4	9.1	21.3	0.4
	Share in Class Rank Percentile Distribution						
	Bottom-20%	23.3	19.2	1.2	22.3	19.5	1.1
	Top-Half	48.9	50.1	1.0	49.4	50.0	1.0
	Top-20%	19.9	19.9	1.0	20.5	19.7	1.0
<i>Panel B: Admittees</i>	Share in SAT/ACT Distribution						
	Bottom-20%	35.3	9.8	3.6	34.0	12.4	2.7
	Top-Half	35.1	65.4	0.5	35.8	60.2	0.6
	Top-20%	10.6	28.1	0.4	12.6	27.6	0.5
	Share in Class Rank Percentile Distribution						
	Bottom-20%	14.2	8.4	1.7	8.8	8.7	1.0
	Top-Half	57.4	63.9	0.9	66.8	64.6	1.0
	Top-20%	23.8	26.4	0.9	29.0	26.5	1.1
<i>Panel C: Enrollees</i>	Share in SAT/ACT Distribution						
	Bottom-20%	34.7	10.8	3.2	35.5	14.3	2.5
	Top-Half	34.4	62.3	0.6	31.9	54.9	0.6
	Top-20%	11.0	24.2	0.5	9.4	22.1	0.4
	Share in Class Rank Percentile Distribution						
	Bottom-20%	15.4	8.9	1.7	10.3	9.4	1.1
	Top-Half	54.8	62.4	0.9	62.6	62.9	1.0
	Top-20%	21.9	24.6	0.9	25.3	24.8	1.0

Note: A student's position in the relevant distribution is determined on a year-by-year basis using data from all applicants. Students with missing values for the relevant variable are omitted from the share calculations.

Table 6

Relative Disadvantages of Underrepresented Minorities Among Applicants, Admittees, and Enrollees at Texas Tech

		Pre-Hopwood (1995/1996)			Top-10 (≥ 1998)		
		URMs	non-URMs	Ratio	URMs	non-URMs	Ratio
<i>Panel A: Applicants</i>	Share in SAT/ACT Distribution						
	Bottom-20%	48.1	16.7	2.9	40.8	17.2	2.4
	Top-Half	25.1	51.4	0.5	29.1	52.8	0.6
	Top-20%	7.8	21.2	0.4	8.2	21.4	0.4
	Share in Class Rank Percentile Distribution						
	Bottom-20%	22.9	19.5	1.2	21.4	19.7	1.1
	Top-Half	49.5	49.5	1.0	50.3	49.9	1.0
	Top-20%	19.2	19.7	1.0	21.8	19.5	1.1
<i>Panel B: Admittees</i>	Share in SAT/ACT Distribution						
	Bottom-20%	47.3	16.3	2.9	28.0	12.2	2.3
	Top-Half	25.4	51.7	0.5	37.2	58.3	0.6
	Top-20%	8.0	21.3	0.4	10.7	23.9	0.4
	Share in Class Rank Percentile Distribution						
	Bottom-20%	13.7	13.2	1.0	13.0	13.9	0.9
	Top-Half	55.8	54.7	1.0	59.7	55.3	1.1
	Top-20%	21.6	22.1	1.0	28.4	21.9	1.3
<i>Panel C: Enrollees</i>	Share in SAT/ACT Distribution						
	Bottom-20%	45.8	16.3	2.8	32.7	15.8	2.1
	Top-Half	25.7	51.1	0.5	33.0	52.9	0.6
	Top-20%	8.2	21.0	0.4	9.4	20.8	0.5
	Share in Class Rank Percentile Distribution						
	Bottom-20%	18.1	14.7	1.2	18.4	16.5	1.1
	Top-Half	47.4	52.4	0.9	49.6	53.1	0.9
	Top-20%	14.8	20.3	0.7	19.4	22.0	0.9

Note: A student's position in the relevant distribution is determined on a year-by-year basis using data from all applicants. Students with missing values for the relevant variable are omitted from the share calculations.

Table 7

Composition of In-State Student Applicant, Admission, and Enrollee Pools: Texas A&M and UT-Austin, Pre-Hopwood and Top-10% Years

(In percent)	Applicants			Admittees			Enrollees		
	Pre-Hopwood 1992-1996	Top 10 % 1998-2002	Pre-Hopwood 1992-2002	Pre-Hopwood 1992-1996	Top 10 % 1998-2002	Pre-Hopwood 1992-2002	Pre-Hopwood 1992-1996	Top 10% 1998-2002	Top 10% 1998-2002
<i>Texas A&M</i>									
Black	4.7	3.9 *	5.2	3.4 *	4.2	2.7 *			
Hispanic	12.9	11.6 *	14.7	11.2 *	12.7	9.5 *			
Asian	5.5	6.5 *	5.3	5.9	3.5	3.5			
White	75.2	77.5 *	74.4	78.9 *	79.3	83.7 *			
N	67,676	75,715	51,381	55,089	29,807	33,568			
<i>UT-Austin</i>									
Black	4.5	4.8	3.9	4.0	4.0	3.6			
Hispanic	15.5	15.4	16.0	14.6 *	14.7	14.2			
Asian	13.6	16.2 *	14.0	17.5 *	14.5	18.1 *			
White	65.9	63.2 *	65.6	63.4 *	66.4	63.6 *			
N	70,915	79,681	50,725	59,811	30,126	36,900			

Source: Texas Higher Education Opportunity Project (THEOP) administrative data.

Notes: The race/ethnic categories do not sum to 100% because the residual group (Native Americans) are not shown. International students and those with missing race/ethnicity are not included.

** denotes a significant difference between the pre-Hopwood and Top-10% shares at the 10% level.