College Selectivity and the Texas Top 10% Law

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Abstract

This paper addresses how institutional selectivity influences college preferences and enrollment decisions of Texas seniors in the presence of a putatively race-neutral admissions policy—the top 10% law. We analyze a representative survey of Texas high school seniors as of spring, 2002, who were re-interviewed one year later to evaluate differences in selectivity of college preferences and enrollment decisions according to three criteria targeted by the new admissions law: high school type, class rank and minority group status. Results based on conditional logit estimation produce three major conclusions. First, Texas seniors, and top decile graduates in particular, are highly responsive to institutional selectivity. Second, graduates from feeder and resource affluent high schools are more likely, whereas their counterparts who graduated from resource poor, Longhorn or Century scholarship high schools are less likely, to choose selective institutions as their first preference. Both for first college preference and enrollment decisions, blacks and Hispanics are less likely than whites to opt for selective colleges. Third, although disparities in selectivity of college preferences by high school type and minority group status persist among top decile graduates, these do not carry into actual matriculation– a result we attribute to the selection regime governing application and enrollment decisions.

JEL Classifications: J15, I20, I21
Keywords: school choice, demand for schooling, human capital

Paper presented at the 2004 Annual meetings of the Population Association of America, Boston. This research was supported by the Ford, Mellon and Hewlett Foundations as part of the Texas Higher Education Opportunity Project (THEOP) and received additional institutional support provided by the Office of Population Research at Princeton University, which receives core support from NICHD (GRANT #P30HD32030). Direct all correspondence to M. Tienda.

December, 2004

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I. Introduction

Texas engaged in a bold experiment in response to the 5th Circuit Court's decision in *Hopwood v. University of Texas Law School*, which judicially banned consideration of race in college admissions decisions. The brainchild of a team of administrators and faculty who sought to protect institutional diversity, H.B.588—passed in 1997 and implemented fully by 1998 – guarantees automatic admission to all seniors who graduate in the top decile of their class. The top 10% law, as H.B.588 is popularly known, allows rank-eligible graduates to select the post-secondary institution where they would exercise their admission guarantee.[1] Although private institutions within the jurisdiction of the 5th circuit were bound by the *Hopwood* ruling, only public institutions were subject to the automatic admission guarantee.

H.B.588 was designed to broaden access to public post-secondary institutions by fostering greater geographic, socioeconomic and race/ethnic representation among seniors ranked in the top decile of their class. The law's appeal derives from its apparent simplicity, namely its use of class rank as a uniform criterion for assessing merit, which is applied uniformly to all high schools that rank their students using grade point averages. Thus, in principle H.B.588 broadened college access by equalizing the admissions chances of students from rich and poor high schools, and those with strong and weak traditions of post-secondary enrollment. Against a backdrop of pervasive racial

[1] In California, students eligible for admission to the UC system are determined on a statewide basis using a standardized criteria, but students are not guaranteed their campus of choice. The top 4% of local schools not included in the statewide admission pool also are assigned a UC institution. Similarly, the Florida 20% plan guarantees admission to a college, but students are not guaranteed campus choice.

and ethnic school segregation, the top 10% law also promised to increase the share of minority students eligible for automatic admission.

Several recent studies have addressed the institutional consequences of the top 10% law (Tienda, et al., 2003a), determinants of college intentions (Bellessa-Frost, 2004), and actual college enrollment under the plan (Tienda and Niu, 2004), but none have considered how institutional selectivity influences college choice. Yet, the long-standing national controversy about affirmative action revolves around access to *selective* institutions, not college access in general (Bowen and Bok, 1998). Interest in institutional quality (selectivity) has grown because of rising demand for relatively fixed numbers of places at selective institutions (Bowen and Bok, 1998); because of successful institutional marketing activities (McDonough, 1994); and because of claims that post-graduation returns depend on the quality of institution attended (Hoxby, 2001; Bowen and Bok, 1998; Hossler, et al., 1989).[2]

Supporters of the top 10% plan herald it as a merit-based alternative to affirmative action, emphasizing that the law leveled the playing field in *access* to the public flagships, although admissions officers cautioned from the outset that additional outreach and scholarship programs also are necessary to ensure enrollment of high-rank students from low income schools (Walker and Lavergne, 2001). Opponents argue that H.B.588 gives preference to high achieving students from low performing high schools over highly qualified students from the most competitive high schools in the State.

In essence, the change in admission regime from affirmative action to the top 10 % plan shifts the criteria for excludability from individual attributes – race and ethnicity – to high school attributes, i.e., high and low performing schools. How the change in

[2] For a less positive assessment of the returns to institutional quality, see Dale and Krueger, 1998.

admissions criteria plays out in students' institutional choices is unclear because top decile students attend high schools that differ in their college-going traditions; because individual students differ in their knowledge of college options; and because the majority of college goers are not ranked in the top decile of their class. Therefore, understanding college choice behavior under H.B.588 requires simultaneous consideration of secondary and post-secondary institutional attributes, as well as the class rank and ethnicity of prospective college students.

Accordingly, we examine students' preferences for and enrollment in selective post-secondary institutions for a representative sample of Texas high school seniors whose admissions were governed by H.B.588. We emphasize the selectivity of college choices both because this issue lies at the core of the raging debate in Texas about the relative merits of race sensitive admissions versus the percent plan in determining who gains access to the public flagships (Irving, 2004; Moses, 2004; Wilson, 2003; Laird, 2003; LeBas, 2003). Specifically, we evaluate differences in the selectivity of college preferences and enrollment decisions of Texas seniors according to three criteria targeted by affirmative action and the top 10% law, namely, minority group status, high school type and class rank.

The empirical analysis addresses three questions. First, how does institutional selectivity figure into students' college preferences and enrollment decisions? Second, does minority group status and the type of high school attended influence students' responsiveness to college selectivity? Finally, focusing only on seniors ranked in the top decile of their class, how does race/ethnicity and high school type influence their responsiveness to college selectivity? These questions, but the latter two in particular,

are germane for addressing whether H.B.588 broadens access to and promotes diversity at the selective public colleges and universities in Texas.

To motivate the empirical analysis, Section II provides a brief synopsis of the college choice literature and derives a theoretical framework for the empirical analysis. Following a thumbnail sketch of the Texas Higher Education Opportunity Project, in Section III we describe the survey data and operational measures of the core variables. Section IV presents and discusses results of conditional logit models predicting both expressed first preference and actual enrollment decisions, focusing on the interaction between institutional selectivity and the debated policy levers, namely class rank, race/ethnicity and high school type. The final section discusses the implications of the results in light of how selection operates through stages of the college decision process.

We find that most differentials in college enrollment are eliminated for seniors who graduated in the top decile of their class, but differentials in college preference persist according to type of high school attended and minority group status. This puzzle has a straightforward interpretation, namely that the students who succeed in enrolling are a highly selective subsample of those who qualify for the admission guarantee. According to census 2000, blacks and Hispanics comprised 56 percent of Texas's college-age population. Two years later, when our survey was conducted, 43 percent of high school graduates were black or Hispanic, and despite pervasive segregation that increases the odds that underrepresented groups graduate in the top decile of their class, only 32 percent of top decile students are black or Hispanic (Tienda and Niu, 2004). Moreover, the admissions guarantee does not guarantee enrollment. Of those who actually matriculated in 2002, black and Hispanic students comprised only 19 percent of

first-time freshmen at UT and only 12 percent at Texas A&M. Thus, H.B. 588 may be a necessary condition to broaden college choice, but it is clearly insufficient.

II. Modeling College Choice

Until the early 1980s, few analysts empirically examined how and why students make the college choices they do (Chapman, 1981; Manski and Wise, 1983; Fuller, et al., 1982). Weiler (1994) claims that the circumstances governing college choice are not well understood partly because admissions are becoming more competitive at selective institutions (McDonough, 1994); partly because the empirical tools to estimate dynamic multi-state decision models were not readily available until recently (Soss, 1974; Behrman, et al., 1998); and partly – perhaps mostly – because of the sheer magnitude and complexity of the choice process (Hossler, et al., 1989).[3]

Chapman (1981) laid the conceptual foundations for the "stage" models of college choice, which Hossler and Gallager (1987) synthesized into three stages of decision-making: (1) "*predisposition to attend college*;" (2) "*search for a choice set*;" and (3) "*matriculation.*" Identification of the choice set concludes when students apply to one or more institutions. During the search stage, students presumably test their aspirations against realistic options based on their calculated probability of admission (Soss, 1974; Fuller, et al., 1982; Manski and Wise, 1983). Usually this results in lowered expectations about plausible options. For example, if students perceive that admissions are becoming more competitive, they may elect not to apply to their preferred institution. Actual choice

[3] McDonough & Antonio (1996) report about 3600 possible college choices, but both Barron's and U.S. News and World Report list less than half as many.

sets differ among students because some apply to several institutions, while others only apply to one.[4]

Early analysts of college choice acknowledged the enormity of the matching problem presented by considering how, in the face of growing awareness about alternatives through marketing and the sheer expansion of the post-secondary system, the constellation of individual and institutional characteristics mutually influence students' preferences and enrollment decisions (Soss, 1974; Chapman, 1981; McDonough, 1994; Hossler, et al., 1989; Hossler and Gallagher, 1987). Manski and Wise (1983) were among the first to illustrate the power of choice models for studying college preferences (Mare, 1985). Although race comparisons are common in early studies of college choice, few considered Asians or Hispanics. The inclusion of Hispanics in national surveys since the mid-1970s encouraged comparisons of ethnic differences in post-secondary enrollment and graduation (McDonough and Antonio, 1996; Hurtado, et al., 1997), but did not guarantee comparative analyses (e.g., Bowen and Bok, 1998). The ongoing debate about the merits of affirmative action versus alternative admission regimes coupled with the growing diversification of the college-age population nationally, particularly in states like Texas, makes consideration of Hispanics and other racial minority groups even more important (Tienda, et al., 2003a).

Recent empirical analyses of college choice represent students' behavior using a random utility model, which is estimated using conditional logit techniques (Long, 2003; Montgomery, 2002; Manski and Wise, 1983; McFadden, 1974). Presumably, students

[4] Before H.B.588 was enacted, students desiring to attend the public flagships may have been inclined to apply to back up institutions, but the admissions guarantee obviated this need for those ranked in the top decile. However, students planning to attend a non-selective college also may apply only to one institution because the chances of admission are virtually certain for those who attain a high school diploma.

choose the institution that yields the highest utility from all options in their college choice set. We adopt this analytical approach to examine college decision-making under the top 10% regime, focusing on the institutional selectivity of seniors' *stated* first college preference and the selectivity of the college in which they actually matriculate.[5]

Model

Formally, the model assumes that student i chooses among J alternative colleges. The utility of student i stating a preference for or attending college j is given by:

$$U_i\,(\text{college j}) = \beta \mathbf{Z}_{ij} + \varepsilon_{ij}\,,\ j = 1, \ldots, J \qquad (1)$$

where **Z** is a vector of institutional attributes X_{ij} and individual characteristics W_i.[6] College education is an investment that produces human capital. Presumably, college quality, measured by the selectivity of admissions, determines the value of human capital potentially produced, and tuition (plus room and board) indexes price. Students' attributes, such as high school performance, family background and place of residence, influence both demand for higher education and the college choice set considered. For example, a student who graduated from a competitive, suburban high school may prefer to attend a more selective college, while high achieving students from resource-poor high schools may aspire for less selective institutions, including nearby community colleges.

[5] Students were asked to list their first five college choices, in order of priority, and whether they applied and were admitted to each institution listed. We did not condition institutional preferences by requiring application, although the majority who listed a first preference actually applied (76%).

[6] Notation X_{ij} denotes that two institutional attributes are individual-specific, as described in the data section.

Choosing college j over other alternatives implies that U_i(college j)> U_i(college k), for all k≠j. Under the assumption that error terms ($\varepsilon_{i1}, \ldots, \varepsilon_{ik}$) are random, independently-distributed with an extreme value distribution (the Gumbel distribution), the probability that student i chooses college j is:

$$\text{prob(i chooses college j)} = \frac{e^{\beta Z_{ij}}}{\Sigma_J \, e^{\beta Z_{ij}}}$$

Maximum likelihood estimation of β provides the estimated effect of institutional attributes X_{ij} and student characteristics W_i on the probability that the i^{th} student chooses college j.

To address how institutional selectivity figure into college preference and enrollment decisions, we specify and estimate three models of college choice according to institutional selectivity. The baseline model, where

$$Z_{ij} = \{ X_{ij}, W_i \},$$

tests whether students prefer more selective institutions, based on their top choice and actual enrollment decision, controlling for other institutional and individual attributes. Presumably, students prefer more selective colleges, which are expected to produce higher amounts of human capital along with other non-pecuniary benefits (e.g., prestige). Moreover, because availability of slots varies inversely according to institutional selectivity, and because enrollment depends on a positive admission decision, in practice

students may enroll in colleges that are less selective than their top choice. Nevertheless, when given a choice students will always prefer a more over a less selective institution, other things being equal.

The second specification considers two sets of interactions, type of high school attended and minority group status, respectively,

$$Z_{ij}' = \{Z_{ij}, \text{institutional selectivity*high school type}\} \quad (2a)$$

and

$$Z_{ij}' = \{Z_{ij}, \text{institutional selectivity*race/ethnicity}\} \quad (2b)$$

in this specification the coefficients for the selectivity interaction terms indicate whether students who graduate from high schools that differ in their affluence and college-going traditions, or whether minority students respond differently to college selectivity under the top 10% admission regime. Graduates from resource affluent schools with strong college-going traditions are expected to be more responsive to college selectivity, and those from resource poor schools with weak college-going traditions should be less responsive. Furthermore, we expect that black and Hispanic students will be less responsive to college selectivity and Asian students more responsive than their white counterparts, other things equal. The third specification, which estimates separate models for top decile students, allows us to evaluate whether college access is equalized for top 10% graduates from different types of high schools and for underrepresented minority groups. The provisions of H.B.588 do not apply to private post-secondary institutions in the state or to any out-of-state institutions, which we model as controls.

III. Data and Empirical Specification

The empirical estimation uses survey data based on a representative sample of Texas public high school seniors as of spring, 2002, and follow-up (wave 2) interviews with a random sub-sample of the senior cohort.[7] The baseline sample was drawn using a two-stage stratified sampling design. In the first stage, 62 PSUs were randomly chosen to represent the high school-age population. For the second stage, 108 public high schools were randomly drawn from the universe of secondary schools that included both 10th and 12th grades and had a senior class of 10 or more students.[8] From the sampled high schools, 13,803 seniors were interviewed using a paper and pencil in-class survey instrument. For cost reasons only a sub-sample of 5,800 seniors, or about 42 percent of the original sample, were re-interviewed one year after graduating.[9] The response rate for the wave 2 interviews was 70 percent, and sample weights for the follow-up interviews have been recalibrated to the original population. The major strength of the longitudinal survey design is that it avoids selection biases inherent in other studies by asking students' college choices *prospectively* rather than retrospectively. [10]

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[7] These survey data were collected by the Texas Higher Education Opportunity Project (THEOP), which is a longitudinal study to evaluate the consequences of changed admissions regimes.

[8] Of these, three schools were ineligible because they were special needs schools, and 98 of the remaining 105 schools cooperated by permitting in-class administration of the survey (86) or providing student addresses (12) so that a mail survey could be administered. Only two of the non-cooperating schools were outright refusals and the remaining five were long-term recalcitrant. The school-level cooperation rate of 93.3 percent (98/105) is outstanding—all the more so because of the sensitive testing period in which we requested additional class time. Some high schools that did not want to take up class time for the survey, allowed us to mail surveys directly to students. Mail-in students represent about 4.5% of the total senior sample.

[9] To guarantee the maximum possible precision for blacks and Asians, all baseline respondents from these groups were included in the longitudinal sample; proportionate samples of Hispanics and non-Hispanic whites were randomly drawn for the sample balance. Weights ensure representativeness of the sample to all Texas high school seniors in 2002.

[10] Surveying high school students and observing their college choices *prospectively* rather than retrospectively avoids two sources of selection biases inherent in recent studies based on college enrollees

In addition to basic demographic, socioeconomic and standard tracking information, the baseline survey obtained information about future plans, including up to five ranked college preferences, applications and admission decisions (seniors only) as well as perceptions about college. The first follow-up survey (wave 2) recorded whether respondents actually enrolled in college one year after high school graduation, and if so, where. Our data includes information about up to three institutions to which students were admitted, in addition to the institution where they enrolled.

All colleges in the preference set (up to five institutions in baseline), the admission set (up to three in the first follow-up) and the institutions actually attended since leaving high school were IPEDS-coded and appended to individual records. This information permits classification of college choices by institutional type (e.g., junior college, four-year public or private, etc), location, and selectivity – that is, the competitiveness of their admissions. High school attributes also were appended to individual records in the baseline survey using information provided by the Texas Education Agency. These high school attributes are used to stratify secondary schools according to socioeconomic status as well as race/ethnic composition.

College Choice Set

To portray the universe of possible college options, we include all post-secondary institutions in Texas identified by the Texas Education Agency (N=196). To the list we added all non-Texas post-secondary institutions identified by seniors in their preference

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(e.g., Bowen and Bok, 1998; Massey, et al., 2003), namely, whether to apply to college, and, conditional on acceptance, where (i.e., institutional type and selectivity) to enroll. In addition, the survey allows us to identify the full range of students' post-secondary school choices, including part-time enrollment, postponement, and intermittent participation, as well as full-time versus part-time attendance.

set, including those where students were admitted and ultimately enrolled if these were not identified as one of their five preferences (N=674), for a total of 870 unique institutions.[11] We assume that the latter represent a random sample of non-Texas colleges and universities.[12] The college set for enrollment decisions includes the institutions where students actually enrolled, those where they were admitted (but elected not to enroll), the nearest community college, and the nearest public and private four-year institutions that are classified as *non* or *less competitive* by Barron's. This operationalization of college opportunity for the enrollment decision assumes that every Texas graduating senior has access to the last three categories of post-secondary institutions irrespective of their class standing, in addition to all selective institutions to which they were admitted. This is a reasonable assumption because many students who aspire to attend a four-year institution actually enrolled at a nearby community college (Cortes, et al., 2004). Thus, the enrollment choice set includes three to seven institutions per student.

Having information in the actual admissions set affords an advantage lacking in many other studies of college choice (e.g., Long, 2003; Montgomery, 2002; Manski and Wise, 1983; Kohn, Manski and Mundel, 1976), namely we can better approximate the true choice set for the enrollment decisions.[13] Lacking information about the true choice

[11] We exclude institutions with invalid IPEDS codes and those lacking valid information about required institutional attributes.

[12] For computational efficiency, this assumption keeps the institutional matrix to a manageable level for computing distances from respondents' high schools and for appending the array of institutional characteristics of interest. Other analysts (Long, 2003) have used the full set of post-secondary institutions identified by NCES, which not only greatly increases the computational demands, but also seems unrealistic for our sample because the vast majority of Texas college bound high school graduates (92%) attend college in-state.

[13] The sample includes cases that only reported the enrollment college and no others to which they were admitted (W2). We also estimate models for respondents with at least one other college that granted admission. The conditional logit results are consistent with the results reported here in their direction, but

set, analysts use either the entire college universe or derive an imputed choice set. However, both strategies introduce estimation problems, especially for the enrollment decisions. As Kohn, Manksi and Mundel (1976:401) note, "The inclusion of colleges absent from the true choice set but inferior to the chosen college will have no adverse effect on estimation since the choice would have been the same even if they had been present. On the other hand, the inclusion of superior or preferred colleges that do not appear on the true choice set will make it seem that a college with less of the desired qualities is chosen over the one with more." We avoid the latter difficulty because our data is bounded by actual choices and capitalize on the former by including plausible institutions with open admissions standards.

Institutional Selectivity and Attributes

Institutional selectivity, the focus of the empirical analysis, is measured using Barron's scheme, which classifies colleges and universities according to the competitiveness of their admissions. Although the "selectivity" categories consider measures of student academic achievement, such as SAT I scores, class rank, and institutional admission rates, the Barron's guide also stipulates that these categories are *not* ratings of college academic standards or quality of education provided. There is, nonetheless, an association between academic standards and the selectivity of admissions. That the controversy about both affirmative action and the Texas top 10% admissions regimes centers on access to selective institutions makes this an appropriate index for the analysis of college choice.

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the magnitudes are smaller. This is reasonable because students who were admitted to at least one other college are more likely to be top decile students, to have attended feeder schools, and to have been admitted to more competitive colleges.

All institutions in students' choice sets were assigned to one of five categories reflecting the selectivity of their admissions and overall academic quality: *most competitive* (e.g., Rice University); *highly competitive* (e.g., UT-Austin and Southwestern University); *very competitive* (e.g., Texas A&M University, UT-Dallas, and Trinity University); *competitive* (e.g., Texas Christian and Texas Tech); *non* or *less competitive* (e.g., UT-San Antonio and UT-El Paso). The Barron's scheme only classifies four-year post-secondary institutions, but we include community college as a separate category because of their growing importance as a post-secondary option in Texas and the nation.

The empirical models consider several institutional attributes known to influence college choice, including cost, total enrollment, institutional type, and location. Because a student's standardized test score relative to the average of a college's student body may influence preference for and enrollment at that institution, a measure of institutional-individual scholastic "fit" is modeled to account for the likelihood of admission (Long, 2003). The operational variable expresses a student's College Board score as a deviation from the institutional spread, reported by NCES and Barron's college profile for 2002.[14] Two-year colleges do not report SAT scores, and these data are also missing for some four-year institutions. For institutions lacking information about SAT 25th and 75th percentiles, we substitute the mean for institutions of their selectivity category. Because 2-year colleges have virtually open admissions, we assign 200 and 700 as their 25th and

[14] We convert ACT scores if available or predict missing SAT scores using students' decile class rank, high school curriculum, most recent math and English grades, whether they have taken English and math AP courses, whether languages other than English are spoken at home, race/ethnicity, parental education, high school types, and several high school attributes including % enrolled in grades 11-12 taking AP courses, % AP exams passed, % students passed algebra test, % with college plans, and high school dropout rate. A sensitivity test comparing results that excluded observations with missing SAT or ACT scores and those that included imputed values produced results very similar to those reported here, particularly for top decile students.

75th percentile values scores – that virtually qualify all students for admissions.[15] Table 1 summarizes these institutional attributes, along with their summary statistics.

(Table 1 About Here)

Individual Attributes: Class Rank, Minority Status and High School Type

The THEOP survey includes self-reported class rank, measured in deciles, and students' race/ethnicity. Class rank is either known to students or estimated by students when unknown. That rank can be based either during spring semester of the junior year or fall or spring of the senior year, depending on the semester in which students applied and were admitted, partly explains why almost 20 percent of the college choice sample is ranked as top decile graduates.[16]

To portray socioeconomic variation among secondary schools, we devised a typology that differentiates resource poor and affluent high schools from those of average resources. Among affluent and resource poor high schools, we further distinguish between those with low and high college going traditions. Feeder high schools are a subset of the affluent schools with very strong college-going traditions, including large number of students who historically attended the two public flagships. We defined feeder high schools as the top 20 high schools based on the absolute number of students

[15] Ideally, we would like to categorize institution-individual fit into four categories: individual SAT score is above an institution's 75th percentile, between the 75th percentile and the mean, between the mean and the 25th percentile, and below the 25th percentile. However, NCES only provides 25th and 75th percentiles, and imputing the mean as the middle point of the two implies a normal or non-skewed SAT score distribution for each individual institution. Because this set of variables serve as controls in our estimation, we refrain of making such assumptions for more detailed categorization.

[16] Higher ranked students are more likely to know their class rank, to state an institutional preference and to enroll in college, which also contributes to the disproportionate share of classified as top decile graduates, but so too does upward bias in response error. We plan to obtain transcript data from the high schools to verify the self-reported rank in the coming year, but were reluctant to do so when respondents were minors.

admitted to UT-Austin and A&M in 2002.[17] At A&M, the top 20 feeder high schools accounted for 15 percent of students admitted in 2000, and 14 percent of enrolled freshmen. For UT, the corresponding figures are both 23 percent. The combined list of UT and A&M feeder schools represent only 28 different high schools (out of over 1500 public high schools) because of considerable overlap among two sets. Survey results reveal that feeder and resource-affluent schools are located in suburban areas around major cities in the eastern part of the state. Nearly 80 percent of seniors from feeder schools live in homes owned by their parents, and two-in-three have parents with at least college education.

Among the resource poor high schools, we distinguish between those with low college-going traditions whose top decile seniors have been targeted by UT-Austin and A&M to receive Longhorn or Century scholarships, and the remainder. These two scholarship programs were developed because many top decile students from poor schools were unlikely to enroll at the public flagships without financial assistance. Longhorn and Century scholarships enable high-achieving seniors from poor schools to act on their admissions guarantee. About 20 percent of resource poor schools are located in the southern part of the state, as are over 25 percent of schools targeted for Longhorn or Century scholarships. Seniors attending resource poor schools designated for Longhorn or Century scholarships are more likely than feeder school students to live in rented homes (33 vs. 20 percent), and only 10 percent have college-educated parents. About one-in-three seniors from resource poor schools live with parents lacking high school education.

[17] By 2000 H.B.588 had been in effect for three full years, but as of this date there were no discernible deleterious effects for the feeder school students because the percent of top 10 admits had not much exceeded the pre-*Hopwood* shares (see Tienda et al., 2003a).

IV. Determinants of College Choice: Conditional Logit Results

Table 2 reports the results of the conditional logit estimation for the baseline models of preferences and enrollment decisions, and Tables 3 and 4 report estimates of the interactions of institutional selectivity with high school type and minority group status, respectively. Models based on preferences include a college choice set of 870 institutions estimated for 7,417 college-going seniors who specified a first preference, among whom 1,509 graduated in the top decile of their class.[18] The conditional logit enrollment models are estimated for 4,103 seniors who matriculated in a college the year after high school graduation, of whom 855 graduated in the top decile of their class.[19] In all three tables, the left panels are results for all seniors and the right panels for top decile seniors.

Responsiveness to Institutional Selectivity

In their expressed preferences and enrollment decisions, Texas seniors are highly responsive to institutional selectivity. The baseline models, which reveal first preferences and enrollment differentials by institutional selectivity once variation in cost, distance, size, public-private status and location are taken into account, confirm our expectation that students prefer more over less selective four-year institutions. Specifically, compared with *non* or *less competitive* institutions, Texas seniors were twice

[18] The person by institution file results in almost 6.5 million observations for first preferences for the total sample and 1.3 million for the top decile stratum. The number of students drops slightly for the model with race/ethnicity interactions because of missing data.

[19] The person by institution file includes 19.2 thousand observations for all matriculants and 4.2 thousand top decile records. The number of students drops slightly for the model with race/ethnicity interactions because of missing data.

as likely to prefer a *very* or *highly competitive* college, respectively, and 9 times as likely to select as their first choice a college with the *most competitive* admissions.

(Table 2 About Here)

Actual enrollment behavior is even more responsive to institutional selectivity. On the large part, this is because the enrollment choice set is constructed by adding a set of colleges at the lower end of selectivity spectrum to students' admissions set. These include the nearest community college and the nearest four-year public and private institutions with open admissions, which prior studies show become the default colleges attended (Cortes, et al., 2004). At enrollment, Texas graduates prefer two-year colleges over four-year institutions with *non* or *less competitive* admissions, even after taking into account cost and distance factors. Most likely this reflects the flexibility and convenience of community colleges, which often permit students to live at home and to work full or part-time while avoiding the costs of room and board incurred at four-year institutions.

Point estimates for other institutional characteristics are consistent with prior studies. For example, higher costs lower the odds that a institution will rank high in students' preference set or be designated for enrollment. Other things equal, Texas seniors prefer public and in-state institutions over private and non-Texas institutions. That Texas public post-secondary institutions are a great tuition bargain is consistent with the lower odds of matriculating in private relative to public colleges (Tienda, 2004). However, conditional on admission, students are more likely to enroll out of state. This result also has to be understood in terms of the construction of the enrollment choice set, which adds three *Texas* colleges with open admissions to students' admissions set.

Differential Responsiveness by School type and Race/Ethnicity

Table 3, which reports the conditional odds for college choices according to high school type attended, confirms that feeder high school graduates are significantly more likely than students who graduate from the typical Texas school to prefer *most, highly* and *very competitive* institutions as their top college choices over institutions that have nonselective admissions. Specifically, feeder high school seniors are 4 to 6 times as likely to prefer colleges with *very* to *most competitive* admissions over *non* or *less competitive* four-year Texas institutions compared with their statistical counterparts who attended typical Texas high schools. Similar differentials obtain for students who graduated from affluent high schools, except that magnitudes are noticeably lower. For example, seniors from affluent high schools are twice as likely as graduates from a typical Texas high school to identify a college with *very* to *most competitive* admissions as their top choice compared with a *non* or *less competitive* institution.

(Table 3 About Here)

At the other end of the spectrum, seniors who attended resource poor high schools are less likely than graduates from average Texas high schools to aspire attending any selective college or university, as reflected by odds ratios that are uniformly less than 1. Lower preferences for selective institutions are especially pronounced for graduates from Longhorn or Century schools, which historically have low college-going traditions.

Except for the local colleges and universities with open or nonselective admissions, enrollment odds are constrained not only by the probability of admission, conditional on application, but also by the relative demand for slots. Positions at selective institutions are limited by definition. And for students who do not graduate in

the top decile of their class, slots at the Texas public flagships increasingly have come to depend on demand for automatic admission. In 2002, over 60 percent of the freshman class at UT-Austin was comprised of top 10% admits (UT-Austin Office of Public Affairs, 2003), which bodes well for students who graduate at the top of their class, but less so for academically qualified students who rank below the top decile, even if they attended highly competitive high schools.

Against these policy and demographic constraints, it is noteworthy that graduates from feeder and affluent high schools enjoy significantly higher odds of enrollment at institutions with *highly* (e.g., UT-Austin) and *very competitive* (e.g., A&M) admissions than their counterparts who attend typical Texas high schools. However, their enrollment odds at the *most competitive* institutions (in Texas only Rice University so qualifies) are similar. Specifically, compared with students who graduated from an average high school, feeder school graduates are about 3 times as likely, and affluent school graduates about twice as likely, to enroll in *very* or *highly competitive* institutions than *non* or *less competitive* institutions. Graduates from resource poor, Longhorn or Century high schools have similar college preferences as their rank counterparts who attended average high schools, as none of the point estimates differ from zero. The only exception are seniors from Longhorn or Century schools, who are only half as likely to attend a *competitive* college relative to a *non* or *less competitive* college compared with graduates from average high schools.

Race and ethnic differences in responsiveness to college selectivity (Table 4) reveal a powerful message that lends itself to easy summary: for both institutional preferences and enrollment decisions, blacks and Hispanics are significantly *less* likely

than whites to prefer or to enroll in selective colleges and universities. The two exceptions are black and Hispanic seniors destined for the *most competitive* colleges, whose enrollment odds are similar to whites. Revealed preferences for Asians serve as a contrast from the other direction. Specifically, Asians are 2 to 3 times as likely as whites to prefer attending a *highly* or *most competitive* college compared with a non or less competitive institution, but they are only half as likely to prefer a *very competitive* institution. Surprisingly, Asian origin seniors are less likely than white seniors to enroll in colleges with *competitive, very competitive*, or *most competitive* admissions compared with *non or less competitive* colleges, but they are as likely as whites to attend *highly competitive* institutions (e.g., UT-Austin).

(Table 4 About Here)

Top Decile Seniors' College Choice

Not surprisingly, Texas seniors who graduate in the top decile of their class are more responsive to institutional selectivity than all Texas seniors, both in selecting and enrolling in colleges (Table 2, right panel). For example, they are 2 to 3 times as likely to list as their top preference a college with *very* or *highly competitive* admissions compared with a *non* or *less competitive* college. The odds of indicating one of the nation's *most competitive* institutions as a first preference are almost 18 times those of choosing *non* or *less competitive* four-year colleges. Moreover, conditional on admission, top decile students are more likely than their lower ranked counterparts to enroll out of state, other things equal. Besides the construction of the enrollment choice set, which adds three *Texas* colleges with open admissions to students' admissions set, the greater likelihood of

non-Texas enrollment is partly attributable to the large share of top decile Texas seniors who actually enrolled in the *most competitive* institutions (Tienda and Niu, 2004). Except for Rice University, all of the *most competitive* four-year colleges and universities are located outside of Texas.

Differential responsiveness to college selectivity based on students' first preference also is more pronounced for top decile seniors from feeder schools compared with their rank counterparts from typical high schools. The odds that top decile feeder school graduates choose *very*, *highly*, or *most competitive* post-secondary institutions as their first choice over *non* or *less competitive* colleges are between 15 and 28 times as those of their counterparts who attend average Texas high schools. Top decile seniors from affluent schools also are highly responsive to college selectivity, but less so than students who attended feeder high schools. At the other extreme, top decile graduates from resource poor high schools had similar college preferences as their rank counterparts who attended average high schools (as none of the point estimates differ from zero), unlike top decile graduates from Longhorn or Century schools. Because these high schools are distinguished by their low college going traditions – which is the basis for their selection for scholarships to the public flagships – even their top ranked graduates are less likely to know about, and therefore aspire to attend, more selective institutions compared with top decile graduates from typical high schools (Tienda, 2004).

Despite the unequal responsiveness to college selectivity by high school type in first college preference, these differences disappear at enrollment for top decile seniors. At first blush, it appears that H.B.588 equalized higher educational opportunity in Texas because virtually all the point estimates and corresponding odds ratios for the right-most

column in Table 2 are statistically identical. Conditional on admission, enrollment odds of top decile graduates from feeder schools are similar to those of similarly ranked graduates from average Texas high schools. Similar results obtain for graduates from affluent high schools, with one exception, namely that their top decile graduates are 3 times as likely as top decile graduates from an average high school to enroll in a college with *competitive* admissions compared with a *non* or *less competitive* institution. Among resource poor high school seniors who graduated in the top decile of their class, including those from Longhorn or Century schools, enrollment odds at more selective colleges are similar to those of top ranked seniors who attend average Texas high schools. There is one exception to this generalization, namely graduates from resource poor schools are about 6 times as likely as their counterparts from typical Texas high schools to enroll in *competitive* compared with *non* or *less competitive* institutions.

Once college attributes are modeled, college enrollment odds by institutional selectively are relatively uniform across high school types among Texas top decile seniors. The equal enrollment odds by institutional selectivity across high schools suggest two possible interpretations. One is that the insignificant point estimates reflect sampling error due to small sample sizes for the top decile graduates from the resource poor schools, but the small coefficient size does not support this view. A second more substantive explanation derives from highly selective subsample of top decile seniors from poor high schools who actually attend college. We further discuss this selection process in the next section because of its importance both for our substantive inferences and their policy implications.

Similar results obtain for the assessment of institutional responsiveness of top decile seniors according to race/ethnicity – differentials persist in their first preferences, but disappear for enrollment decisions, with two exceptions. The first is that blacks and Asians who graduate in the top 10% of their class are less likely than whites to attend *very competitive* institutions compared with *non* or *less competitive* colleges, but their enrollment odds at all other selectivity strata are comparable to those of whites. This interpretation is consistent with evidence that black and Asian enrollment at Texas A&M – classified as *very competitive* by Barron's – fell below that of whites with similar credentials after H.B.588 was passed (Tienda, et al., 2003a). The second exception is that Asians are less likely than whites to attend the *most competitive* colleges, such as Rice University or out-of-state private institutions that are not governed by the admissions guarantee. This consistency with actual experience bolsters confidence in the robustness of the results as well as findings by high school type.

That none of the odds ratios reaches statistical significance for Hispanics indicates equal enrollment probabilities as whites relative to enrollment at *non* or *less competitive* institutions. Again, sample sizes can not explain the insignificance of the point estimates, but a compounded selection interpretation, which we discuss in the next section, is highly compatible with their roughly equal enrollment odds. Namely, top decile Hispanic seniors who enrolled in four-year colleges and universities are a more selective subset of the total who qualify for admissions guarantee. They not only beat the odds based their scholastic achievement, given national and statewide averages, but they also secured resources to enroll at the selective institutions.

V. The College Pipeline: From Plans to Enrollment

We examine how institutional selectivity influences college preferences and enrollment decisions using a representative sample of Texas high school seniors who graduated in 2002. Conditional logit estimation leads to three major findings. First, under the top 10% law, Texas seniors, and top decile graduates in particular, are highly responsive to institutional selectivity as revealed by their first college preferences and actual enrollment decisions. Second, seniors from feeder and resource affluent high schools are more likely, whereas students from resource poor and Longhorn or Century high schools are less likely, to prefer selective institutions. Furthermore, seniors from feeder and resource affluent high schools also enjoy significantly higher odds of enrolling in *very* and *highly competitive* institutions, which includes the two Texas flagships. Both for first preference and enrollment decisions, blacks and Hispanics are less likely than whites to opt for selective colleges. Third, among top decile seniors, we observe disparities by high school type as well as by race/ethnicity in their responsiveness to the selectivity of their first college preference, but enrollment decisions are uniform across groups.

Our third finding – that most differentials in college enrollment are eliminated for the top decile seniors – suggests that H.B.588 has been successful in equalizing college access for high achieving graduates from resource poor schools and for under-represented minority students who graduated in the top decile of their class. It should be noted that the top 10% law is a policy about uniform admissions, but its effectiveness in equalizing enrollment outcomes hinges on both application decisions and the ability of qualifying students to enroll.

Although most evaluations of H.B.588 have measured the success of the legislation based on changes in who actually matriculates, this is the end result of several nested decisions – planning to attend colleges; defining the preference set; applying and qualifying for admissions; and finally enrolling. In order to enter the enrollment sample, students must apply for admissions, even if they qualify for the admission guarantee. However, many qualifying students, particularly those from resource-poor high schools with low college going traditions and members of underrepresented groups, do not apply, and thus are excluded from the enrollment sample. In another words, seniors from resource-poor schools and minorities who do enroll in a college, particularly a four year college, are a highly selective sub-sample of all potentially qualifying students from these pools. Thus our findings about trivial enrollment differentials by high school type and race/ethnicity should be understood in the light of the contingent decisions involved in the final outcomes.

To illustrate this selection process, Table 5 summarizes the post-high-school plans (left panel) and enrollment outcome (right panel) of the 2002 senior cohort according to type of post-secondary institution, high school type, race/ethnicity and top decile class rank – the focal criteria of the current and prior admission regimes.[20] The upper panel describes all seniors and the lower panel top decile students. The tabulations reveal great disparities in college-going plans by high school type and by race/ethnicity. Among feeder high school seniors, over 70 percent reported four-year college intentions and only 11 percent reported that they had no college plans. By contrast, only 37 percent of Longhorn or Century school seniors reported four-year college intentions and another 37

[20] Higher drop-out rates among poor, Longhorn or Century school students and among blacks and Hispanics mean that these seniors are already a selective group because they are in the high school graduates sample.

percent reported they had no college plans after high school. Also, two-thirds of Asian and 54 percent of white seniors planned to attend a four-year institution following high school graduation, but only 39 and 45 percent, respectively, of Hispanic and black seniors did so.

(Table 5 About Here)

The follow-up survey revealed a high correspondence between college intentions and students' actual enrollment.[21] It appears that the majority of students who wanted to attend college have realized this goal, even if their specific institutional choices were not fulfilled. Feeder high school graduates were far more successful enrolling in four-year colleges than their counterparts who did not attend a feeder school, including other affluent schools. Nearly three-fourths of feeder high school graduates enrolled in a four-year college, compared with about 40 percent of graduates from other affluent, average and resource poor Texas high schools. By comparison, only 27 percent of seniors who graduated from schools targeted for the Longhorn or Century scholarships administered by UT and A&M, respectively, enrolled in a four-year institution. Recall that there is no differential responsiveness at enrollment for seniors from resource poor, Longhorn or Century schools compared with students from average high schools. In fact 27 percent of Longhorn or Century school seniors enrolled in a four-year institution compared with 40 percent of seniors from average Texas high schools.

College plans and enrollment distributions by race/ethnicity reveal a stronger correspondence between college intentions and actual enrollment, except for Hispanics, among whom enrollment rates were considerably lower. Black and Hispanic college

[21] Note that the reduction in sample size does not reflect attrition, but rather the decision to follow-up a random sample of the baseline cohort.

enrollees are more selective than their white and Asian counterparts. About 54 percent of whites and 65 percent of Asians enrolled in four-year colleges, but only 43 percent of blacks and 32 percent of Hispanics did so. These differentials in selection into the college sample are important for interpreting our findings about enrollment outcomes. Resource-poor, Longhorn or Century high school seniors, and black and Hispanic seniors who preferred and actually enrolled in a four-year college are highly selective groups, yet they are still significantly less responsive to college selectivity than their counterparts who attended typical Texas high schools, or whites and Asians. Students excluded from the college-going sample are disproportionately from resource-poor and Longhorn or Century schools, and they are disproportionately black and Hispanic. For them, planning for and applying to colleges pose formidable challenges, not the least of which is financial.

Even with the automatic admissions guaranteed by the top 10% law, there persist large disparities in college planning and enrollment by school type and race/ethnicity among top decile students, as revealed by the lower panel of Table 5. The uniform responsiveness to college selectivity at enrollment according to high school type and race/ethnicity most likely reflects the compound selection process that recruit the most talented among top achieving students from resource poor schools and minority groups. Enrollment of top decile students involves 84 percent of those from average schools, but only 61 percent of graduates from Longhorn or Century schools. In this context, our third finding indicates that the *top 10% law succeeds in equalizing enrollment at selective colleges among high achieving students who actually applied to selective institutions, but not in promoting equality at earlier stages of college planning.* Practically this means

that the trivial differentials in institutional selectivity according to high school type and minority group status in college enrollment are largely driven by the lower likelihood that seniors from poor schools and under-represented groups will set their college aspirations high and actually seek admission. In light of the rapidly changing demography of the State of Texas, the looming challenge is to focus on raising college sights for students from poor schools and under-represented minority groups, and to do so early enough in their educational careers to make attendance at selective colleges a realistic possibility.

References:

Barron's College Division. (2002). *Barron's profiles of American colleges: 25th Edition 2003*, Hauppauge, NY: Barron's Educational Series, Inc.

Behrman, J., Kletzer, L., McPherson, M., & Schapiro, M. O. (1998). Microeconomics of college choice, careers, and wages. *The Annals of the American Academy*, 559: 12-23.

Bellessa-Frost, M. (2004). Racial differences in high school students' educational expectations: How do schools matter?" *Unpublished Ph.D. Dissertation Chapter*. Princeton University, Princeton, N.J.

Bowen, W. G. & Bok, D. (1998). *The shape of the river: Long-term consequences of considering race in college and university admissions*. Princeton, N.J.: Princeton University Press.

Chapman, D. W. (1981). A model of student college choice. *The Journal of Higher Education,* 52 (5), 490-505.

Cortes, K, Tienda, M and Niu, S. (2004). Diversity by Design or Default: Race and Ethnic Differences in College Enrollment under Texas Top 10% Law. Paper presented at the Annual Meeting of the Associate for Public Policy Analysis and Management, Atlanta, Georgia, October 28-30, 2004.

Dale, S. B. & Krueger, A. B. (1998). Estimating the payoff to attending a more selective college: An application of selection on observables and unobservables. Working Paper #409, Industrial Relations Section, Princeton University.

Fuller, W. C., Manski C. F. & Wise D. A.. (1982). New evidence on the economic determinants of postsecondary schooling choices. *Journal of Human Resources*, 17 (4), 477-498.

Hossler, D. and Gallagher, K. S. (1987). Studying student college choice: A three-phase model and the implications for policymakers. *College and University*, 62 (3), 207-221.

Hossler, D., Braxton, J., & Coopersmith, G. (1989). Understanding student college choice." In: J. C. Smart (ed.), *Higher education: Handbook of theory and research (IV)* (pp. 231-288). New York, N.Y.: Agathon Press.

Hoxby, C. M. (2001). The return to attending a more selective college: 1960 to the present." In: M. Devlin & J. Meyerson (eds.), *Forum futures: Exploring the future of higher education, 2000 papers*, 3 (pp. 13-42). New York: Jossey-Bass.

Hurtado, S., Kurotsuchi-Inkelas, K., Briggs, C., & Rhee, B. (1997). Differences in college access and choice among racial/ethnic groups: Identifying continuing barriers." *Research in Higher Education*, 38 (1), 43-75.

Irving, C. (2004). Texas returns to affirmative action: Readjustment and confusion in the aftermath of recent U.S. Supreme Court decisions. *National Crosstalk*, 12(1), 1, 15-16.

Kohn, M. G, Manski, C. F., & Mundel, D. S. (1976). An empirical investigation of factors which influence college-going behavior. *Annals of Economic and Social Measurement*, 5 (4), 391-419.

Laird, B. (2003). Changing admissions policies: Recent Supreme Court decisions impact affirmative action programs. *National Crosstalk*, 11 (4), 10-11.

LeBas, J. (2003). Plans may raise debate in Legislature. *The Bryan-College Station Eagle.* 7 December.

Long, B. T. (2003). Does the format of a financial aid program matter? The effect of state in-kind tuition subsidies. *National Bureau of Economic Research*. Working Paper No. 9720.

Manski, C. F. & Wise, D. A. (1983). *College choice in America*. Cambridge, MA: Harvard University Press.

Mare, R. D. (1985). *College choice in America* (Review). *American Journal of Sociology*, 90 (4), 932-934.

Massey, D. S., Charles, C. Z., Lundy, G. & Fischer, M. J. (2003). *Source of the river: The social origin of freshmen at America's selective colleges and universities*. Princeton N.J.: Princeton University Press.

McDonough, P. M. (1994). Buying and selling higher education: The social construction of the college applicant. *The Journal of Higher Education*, 65 (4), 427-446.

McDonough, P. M. & Antonio, A. L. (1996). Ethnic and racial differences in selectivity of college choice. Presented at the Annual Meeting of the American Educational Research Association, New York City, N.Y. April.

McFadden, D. L. (1974). Conditional logit analysis of qualitative choice behavior. In: P. Zarembka (ed.), *Frontiers in Econometrics* (pp. 105-142). New York, N.Y.: Academic Press.

Montgomery, M. (2002). A nested logit model of the choice of graduate business school. *Economics of Education Review*, 21 (5), 471-480.

Moses, G. (2004). Texas A&M Regents say nothing in writing about race and affirmative action. *Texas Civil Rights Review.* January 27,

Soss, N. M. (1974). The demand for college education: The applications decision. Unpublished Ph.D. Dissertation. Princeton University, Princeton, N.J.

Tienda, M., Leicht, K. T., Sullivan, T., Maltese, M., & Lloyd, K. (2003a). Closing the gap?: Admissions and enrollments at the Texas public flagships before and after affirmative action. Working Paper 2003-1, Princeton University Office of Population Research. Online: http://opr.princeton.edu/papers/opr0301.pdf (Accessed 1 August 2003).

Tienda, M. & Niu, S. (2004). Texas' 10-percent plan: The truth behind the numbers. *Chronicle of Higher Education*: B10, January 23.

Tienda, M. (2004). Equity and access to higher education: Lessons from Texas. *Princeton Presidential Lecture*. Princeton University, March 3. Online: http://www.texastop10.princeton.edu/presentations/EquityAndAccess042204.pdf

UT-Austin Office of Public Affairs. (2003). Incoming freshman class at The University of Texas at Austin to have highest academic qualifications, largest Hispanic representation. *UT News Release*, June 2, 2003. Available Online at: http://www.utexas.edu/opa/news/03newsreleases/nr_200306/nr_enrollment030602.html.

Walker, B. & Lavergne, G. (2001). Affirmative action and percent plans: What we learned in Texas. *The College Board Review*, 193, 18-23.

Weiler, W. C. (1994). Transition from consideration of a college to the decision to apply. *Research in Higher Education*, 35(6): 631-646.

Wilson, R. (2003). "The unintended consequences of affirmative action: A controversial study from unlikely sources asks why faculties lack diversity." *The Chronicle of Higher Education Review*, 49(21): A10.

Table 1: Variable Description and Summary Statistics

		First Preference		Enrollment[c]	
Variable	**Description**	**Mean**	**(S.D.)**	**Mean**	**(S.D.)**
Institutional Selectivity					
Two-Year	Dummy variable for two-year colleges	0.253	(0.435)	0.306	(0.461)
Non/Less Competitive	College selectivity are based on students	0.184	(0.387)	0.487	(0.500)
Competitive	tests scores, high school rank, and college	0.236	(0.424)	0.095	(0.294)
Very Competitive	acceptance rate (Source: Barron's Guide,	0.194	(0.396)	0.068	(0.252)
Highly Competitive		0.075	(0.263)	0.036	(0.186)
Most Competitive	2003)	0.059	(0.235)	0.008	(0.089)
Institutional Attributes[a]					
Annual Cost	Cost of attendance, in-state tuition (TX) or out-of-state tuition (non-TX) plus room and board ($1000)	17.778	(9.157)	9.964	(5.917)
Financial Aid:% Need Fully Met	Percent of freshmen whose financial need are fully met	24.589	(31.487)	19.125	(25.734)
Distance	Distance between the student's high school and institutions (10 miles)	86.702	(55.138)	10.446	(21.710)
Enrollment Size	Undergradute enrollment (1000)	6.431	(7.802)	9.749	(10.588)
Private Instituion	Dummy variable for private colleges	0.600	(0.490)	0.385	(0.487)
Non-Texas Institution	Dummy variable for out-of-state institution	0.775	(0.418)	0.055	(0.227)
Institution-Individual Scholastic Fit[b]					
SAT >= 75th Percentile	Student's SAT is higher than institution's 75th percentile	0.377	(0.485)	0.472	(0.499)
25th <= SAT < 75th Percentile	Student's SAT is between institution's 25th and 75th percentiles	0.270	(0.444)	0.335	(0.472)
SAT < 25th Percentile	Student's SAT is lower than institution's 25th percentile	0.334	(0.472)	0.146	(0.353)

Notes: a. Institutional attributes were obtained from the National Center of Educational Statistics (NCES).
b. Variable summary statistics are based on observations due to different college choice set at enrollment.
c. Measure of a student's College Board score relative to the institutional spread.

Table 2: Conditional Logit Estimation of College Preferences and Enrollment: Baseline Model (Odds Ratios, S.E. in paraethesis)

	All Seniors		Top 10%	
	First Preference	Enrollment	First Preference	Enrollment
Institutional Selectivity[a]				
Two-Year	0.2 (.010) ***	2.5 (.180) ***	0.1 (.010) ***	1.2 (.202)
Competitive	2.0 (.076) ***	7.3 (.578) ***	1.7 (.168) ***	8.6 (1.520) ***
Very Competitive	1.8 (.093) ***	13.7 (1.390) ***	2.3 (.266) ***	16.4 (3.591) ***
Highly Competitive	2.4 (.168) ***	15.1 (2.181) ***	3.2 (.481) ***	15.8 (4.433) ***
Most Competitive	9.3 (.926) ***	13.4 (4.252) ***	17.9 (3.405) ***	15.7 (7.275) ***
Institutional Attributes				
Annual Cost	0.846 (.006) ***	0.886 (.012) ***	0.816 (.013) ***	0.872 (.027) ***
Annual Cost^2	1.005 (.000) ***	1.003 (.000) ***	1.005 (.000) ***	1.003 (.001) ***
% Need Fully Met	0.995 (.001) ***	1.000 (.001)	1.000 (.001)	1.006 (.002) **
Distance	0.934 (.001) ***	1.013 (.003) ***	0.943 (.002) ***	0.994 (.006)
Distance^2	1.000 (.000) ***	0.999 (.000) **	1.000 (.000) ***	1.000 (.000)
Enrollment Size	1.082 (.001) ***	0.999 (.003)	1.099 (.004) ***	1.001 (.007)
Private Institution	0.528 (.023) ***	0.360 (.026) ***	0.954 (.099)	0.561 (.099) ***
Non-Texas Institution	0.330 (.015) ***	1.265 (.152) *	0.298 (.032) ***	1.982 (.493) **
Individual-Institutional Fit				
SAT>75th Percentile	0.6 (.028) ***	1.0 (.075)	0.7 (.065) ***	1.1 (.162)
SAT<25th Percentile	0.4 (.015) ***	0.5 (.039) ***	0.4 (.038) ***	0.8 (.161)
Strata (n)	7,417	4,103	1,509	855
College Choice Set	870	3≤set≤7	870	3≤set≤7
Observations (N)	6,452,790	19,204	1,312,830	4,291
Pseudo R-Squared	0.3365	0.2640	0.4002	0.3350

Source: THEOP Wave 1 & 2 Senior Surveys

[a]Reference group: Non/Less Competitive

***: $p<0.001$, **: $p<0.01$, *: $p<0.05$

Table 3: Conditional Logit Estimation of College Preferences and Enrollment: Interactions of College Selectivity by High School Type (Odds Ratios, S.E. in paraethesis)

College Selectivity and High School Type[a]	All Seniors		Top 10%	
	First Preference	Enrollment	First Preference	Enrollment
Feeder High School				
Two-Year	0.6 (.147) *	0.7 (.199)	0.0 (.000)	1.9 (2.720)
Competitive	1.8 (.360) **	1.4 (.444)	4.8 (5.085)	0.0 (.000)
Very Competitive	4.0 (.766) ***	3.0 (.926) ***	15.3 (15.643) **	11.4 (15.057)
Highly Competitive	4.7 (.957) ***	3.2 1.179) ***	17.9 (18.315) **	10.6 (13.969)
Most Competitive	5.8 (1.500) ***	1.8 (1.183)	28.4 (29.485) ***	4.9 (7.165)
Affluent High School				
Two-Year	1.1 (.109)	1.6 (.197) ***	0.7 (.312)	1.6 (.666)
Competitive	1.4 (.131) ***	2.0 (.358) ***	1.5 (.412)	3.4 (1.457) **
Very Competitive	1.9 (.195) ***	2.3 (.442) ***	2.5 (.673) ***	1.6 (.606)
Highly Competitive	2.3 (.266) ***	2.5 (.620) ***	2.8 (.766) ***	1.4 (.548)
Most Competitive	2.2 (.377) ***	3.0 (1.719)	3.5 (1.067) ***	2.4 (1.703)
Poor High School				
Two-Year	0.8 (.099) *	1.1 (.184)	1.4 (.546)	0.7 (.439)
Competitive	0.8 (.090) *	1.3 (.299)	1.0 (.294)	5.7 (3.580) **
Very Competitive	0.7 (.111) *	0.9 (.296)	0.9 (.299)	1.4 (.877)
Highly Competitive	0.6 (.110) **	0.8 (.358)	0.6 (.226)	1.4 (.995)
Most Competitive	0.6 (.179)	0.3 (.455)	1.0 (.418)	0.3 (.514)
Longhorn-Century High School				
Two-Year	0.5 (.053) ***	1.3 (.153)	0.6 (.192)	1.8 (.568)
Competitive	0.4 (.042) ***	0.5 (.112) **	0.4 (.090) ***	0.7 (.288)
Very Competitive	0.4 (.051) ***	0.6 (.183)	0.4 (.089) ***	0.4 (.209)
Highly Competitive	0.6 (.085) ***	0.7 (.230)	0.6 (.144) *	0.6 (.282)
Most Competitive	0.4 (.088) ***	1.5 (1.330)	0.4 (.135) **	1.6 (1.660)
Strata (n)	7,417	4,103	1,509	855
College Choice Set	870	3≤set≤7	870	3≤set≤7
Observations (N)	6,452,790	19,204	1,312,830	4,291
Pseudo R-Squared	0.3414	0.2720	0.4068	0.3516

Source: THEOP Wave 1 & 2 Senior Surveys

[a]Reference Groups: Average High School and Non/less Competitive post-secondary institution.

***: $p<0.001$, **: $p<0.01$, *: $p<0.05$

Note: These interaction models also include all variables in the baseline model

Table 4: Conditional Logit Estimation of College Preferences and Enrollment: Interactions of College Selectivity by Race/Ethnicity (Odds Ratios, S.E. in paraethesis)

	All Seniors		Top 10%	
College Selectivity and Race/Ethnicity[a]	**First Preference**	**Enrollment**	**First Preference**	**Enrollment**
Black				
Two-Year	0.2 (.027) ***	0.5 (.062) ***	0.2 (.118) **	0.6 (.256)
Competitive	0.4 (.040) ***	0.3 (.050) ***	0.5 (.151) *	0.5 (.239)
Very Competitive	0.2 (.021) ***	0.2 (.042) ***	0.2 (.081) ***	0.2 (.099) ***
Highly Competitive	0.2 (.030) ***	0.3 (.096) ***	0.4 (.147) **	0.5 (.270)
Most Competitive	0.2 (.059) ***	0.2 (.155)	0.1 (.075) **	0.0 (.000)
Hispanic				
Two-Year	0.6 (.050) ***	0.7 (.087) **	0.6 (.184)	0.7 (.238)
Competitive	0.4 (.037) ***	0.4 (.075) ***	0.4 (.084) ***	1.1 (.423)
Very Competitive	0.3 (.027) ***	0.2 (.053) ***	0.3 (.069) ***	0.5 (.225)
Highly Competitive	0.4 (.044) ***	0.3 (.093) ***	0.5 (.115) **	0.8 (.326)
Most Competitive	0.4 (.065) ***	0.5 (.325)	0.6 (.147) *	0.5 (.393)
Asian				
Two-Year	0.5 (.122) **	0.5 (.094) ***	0.3 (.218)	0.6 (.268)
Competitive	1.3 (.262)	0.4 (.152) *	0.9 (.375)	0.6 (.485)
Very Competitive	0.5 (.110) **	0.4 (.113) ***	0.6 (.214)	0.4 (.162) *
Highly Competitive	3.1 (.602) ***	0.8 (.233)	3.0 (1.063) **	1.2 (.516)
Most Competitive	2.4 (.633) ***	0.2 (.147) *	2.4 (.937) *	0.2 (.155) *
Strata (n)	7,080	3,714	1,448	810
College Choice Set	870	3≤set≤7	870	3≤set≤7
Observations (N)	6,159,600	17,403	1,259,760	4,063
Pseudo R-Squared	0.3437	0.2732	0.4081	0.3400

Source: THEOP Wave 1 & 2 Senior Surveys

[a]Reference Groups: White and Non/less Competitive post-secondary institution.

***: $p<0.001$, **: $p<0.01$, *: $p<0.05$

Note: These interaction models also include all variables in the baseline model

Table 5: Post-High-School Plans and Enrollment of Texas High School Seniors by High School Type, Race/Ethnicity and Class Rank (in percent)

	First Preference					Enrollment			
	No-College	Four-Year	Two-Year	College-Bound*	N	No-College	Four-Year	Two-Year	N
All Seniors									
High School Type									
Feeder	11.0	72.6	3.8	12.6	732	11.6	73.4	15.1	320
Affluent	21.4	49.2	11.4	18.0	3,252	23.5	42.6	33.9	1,420
Average	26.0	44.0	14.4	15.6	5,198	25.4	41.0	33.6	2,349
Poor	26.4	42.3	14.5	16.8	1,176	30.8	38.1	31.1	556
Longhorn-Century	36.9	36.9	12.2	14.1	2,420	37.2	26.8	36.0	1,096
Race/Ethnicity									
White	19.8	53.9	13.1	13.2	5,339	19.3	49.2	31.4	2,053
Black	23.5	45.4	11.9	19.3	1,514	25.6	42.8	31.6	970
Hispanic	33.0	39.2	13.5	14.3	4,312	33.5	31.5	35.0	1,728
Asian	10.0	66.3	6.8	16.9	607	11.1	65.3	23.6	389
Total	25.0	46.7	12.4	15.9	12,778	25.7	42.1	32.2	5,741
Top 10%									
High School Type									
Feeder	3.4	90.4	0.0	6.2	112	7.3	89.2	3.5	47
Affluent	2.7	86.3	3.6	7.5	460	3.2	83.6	13.1	237
Average	4.8	80.4	5.9	8.9	728	3.5	83.9	12.6	388
Poor	8.6	73.3	8.7	9.4	179	14.4	77.2	8.4	81
Longhorn-Century	16.4	68.3	3.6	7.5	319	19.6	60.7	19.7	168
Race/Ethnicity									
White	3.5	84.2	5.4	6.9	898	3.6	82.8	13.7	412
Black	8.8	75.4	5.2	10.7	128	12.5	71.4	16.1	97
Hispanic	10.5	75.8	5.9	7.8	465	12.8	75.3	11.9	215
Asian	1.4	91.0	0.4	7.3	192	1.5	89.5	9.1	141
Total	6.0	80.6	5.0	8.4	1,798	6.7	80.6	12.6	921

Source: THEOP Wave 1 & 2 Senior Survey

Note: All percents are weighted to population, N's are unweighted

*students who report a college plan but do not specify 1st institutional preference.