Very preliminary and incomplete, comments appreciated

Jockeying for Position: High School Student Mobility and Texas' Top-Ten Percent Rule[*]

April 1, 2005

Julie Berry Cullen, UC San Diego and NBER

Mark C. Long, University of Washington

Randall Reback, Barnard College, Columbia University

Beginning in 1998, all high school students in the state of Texas who graduated in the top-ten percent of their high school class were guaranteed admission to any in-state public higher education institution, including the University of Texas. While the goal of the policy was to improve access for disadvantaged and minority students, the use of a school-specific standard to determine eligibility could have unintended consequences. Students may increase their chances of being in the top-ten percent by choosing a high school with lower-achieving peers than they otherwise would have. In our analysis of student mobility patterns between 8th and 10th grade before and after the policy change, we find evidence that this incentive did indeed influence students' enrollment choices in the anticipated directions.

Keywords: School choice; Student mobility; Peer effects; College admission; Affirmative action

JEL classification: D10; H31; I28, J60; J78

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[*] We would like to thank the Communications and Student Assessment Divisions of the Texas Education Agency for providing the data, as well as the University of Michigan's Office of Tax Policy Research and Department of Economics for providing the funds for data acquisition. We would also like to thank the National Center for Education Statistics for access to the restricted-use version of the National Education Longitudinal Study (NELS). The authors are accountable for all views expressed and any errors.

1. Introduction

The debate over whether a student's race should be factored into college admissions decisions has heated up during the past decade. Although, by declining to hear the case, the U.S. Supreme Court implicitly sanctioned the Fifth Circuit Court of Appeals' 1996 ruling that race could not be taken into consideration in admissions (*Hopwood v. Texas*), two recent Supreme Court decisions have upheld the constitutionality of non-formulaic affirmative action policies.[1] In the interim, California, Florida, Georgia, Texas, and Washington have banned race-based admissions in some or all of their public universities. Texas was the first state to do so, following the 1996 ruling. In response to mounting public concern regarding the ensuing drop in minority matriculation to elite Texas public universities,[2] then Governor George W. Bush helped push through legislation guaranteeing that all high school seniors with grades in the top-ten percent of their own high school class gain admission to any public university within Texas. The Texas program began in the summer of 1998 and, since then, California and Florida have adopted similar plans.[3]

These *x*-percent plans potentially improve access to higher education for disadvantaged students by using a school-specific standard. The admission guarantee ensures that students at low-achieving high schools, who tend to be disproportionately poor and minority, are equally represented among those automatically granted access to public universities. However, these

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[1] In *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.

[2] Bucks (2003) reports that the proportion of first-time student enrollments of Blacks and Hispanics at the University of Texas at Austin was 4.1% and 14.5%, respectively, for the 1996-97 school year, but declined to 2.7% and 12.6% for the 1997-98 school year. At Texas A&M, the proportion of Blacks dropped from 3.7% to 2.9% and the proportion of Hispanics dropped from 11.3% to 9.6%.

[3] See Horn and Flores (2003) for a detailed description of the *x*-percent programs and minority recruitment efforts in California, Florida, and Texas.

policies may also lead to behavioral responses that alter the composition of students at these schools. Consider a student who would have attended a given high school and placed below the top-ten percent in the absence of the reform. With the reform in place, this student might be able to obtain guaranteed access to a premier university by raising his or her grade point average without changing high school plans. Alternatively, the student could choose to attend (or transfer to) another high school with lower-achieving peers, where he or she would be more certain to fall into the top-ten percent.

Since this policy changes the relative attractiveness of schools, it could therefore have unintended positive and negative consequences. If relatively able or advantaged students are more likely to attend previously undesirable schools as a result, then these transfers would reduce stratification and might generate positive spillovers to students in the recipient schools through peer effects. At the same time, this enrollment response might skew access to higher education to those students with otherwise better outside opportunities. In particular, it may crowd out some of the automatic admissions slots that would have gone to disadvantaged and minority students. In this paper, we remain agnostic about the welfare implications and attempt to detect and quantify any high school attendance response to the new admissions program in Texas.

Our analyses of the 10th grade attendance patterns of 1993-94 through 1998-99 8th graders suggest that students did indeed respond strategically. Conditional on their 8th grade school, students who were likely to apply to and be rejected by a public college attended high schools with relatively lower top-ten percent achievement thresholds after the policy change. We find evidence of two behavioral mechanisms associated with this finding. First, students likely to be in the top-ten percent of their local high school but rejected by a public college were more likely to attend this high school after the policy was implemented. Second, students with similar motivations who were not expected to be in the top-ten percent of this high school were found to select other high schools where they would qualify. This strategic mobility has raised the average ability level of qualifiers and the average high school achievement thresholds for qualification.

Our findings also have more general implications. Since this study uncovers evidence of behavioral responses in a context where the costs of strategizing are quite high, we would expect that endogenous group membership would be important in other contexts where rewards are based on reference groups that can be affected by the participants.

Our paper unfolds as follows: Section 2 provides background information concerning college admissions in Texas, Section 3 presents a conceptual framework for how an *x*-percent rule might influence high school enrollment decisions, and Section 4 describes our data and empirical strategies for testing the hypotheses. The results are presented in Section 5, while Section 6 offers a brief conclusion.

2. Background

2.1 Policy Description

The immediate goal of the top-ten percent policy is to raise the college enrollment rate of minority students without specifically using racial preferences. Automatic admission to any of the 35 public universities in Texas is granted if the student is ranked in the top-ten percent of the graduating class and applies to college within two years of graduating.[4] The policy pertains to

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[4] As described by Horne and Flores (2003), the flagships have introduced targeted complementary scholarship programs. UT-Austin has two programs that target scholarships to students with low family incomes whose grades are in either the top 25% or top 10% of their class. Texas A&M has added scholarships to top-ten percent students from certain urban high schools with large concentrations of racial minority students, regardless of the family income of the individual student.

both public and private high school students. The colleges are allowed to expand the automatic admission to students who are in the top-25 percent of their high school class. However, currently the more selective colleges in Texas have not chosen this option. Table 1 displays which colleges have each type of admissions cutoff, as well as information about the size of enrollment and the admissions selectivity at these colleges, using pre-policy data from Barron's Profiles of American Colleges (1996).[5]

For determining eligibility, the student's class rank is based on his or her position at end of the eleventh grade, middle of the twelfth grade, or at high school graduation, whichever is most recent at the college's application deadline. Fall deadlines for applications to the more selective universities are generally in early February. Therefore, for students applying during their senior year, the rank would be based on either the end of the 11th grade or the middle of the 12th grade. The class rank is computed by the individual high school, and administrators have discretion regarding how to handle transfers. School administrators may require transferring students to attend for some period of time before qualifying the student as being in the top-ten percent. As a result, there may be no strategic advantage to late junior and senior year transfers.

2.2 Participation Rates

Among 10th-graders, only those students who would consider attending a Texas public 4-year college will be sensitive to the change in admissions policy when deciding which high school to attend. Texas public colleges are the most prevalent destination for high school students who attend 4-year colleges. Of those freshman students attending a 4-year college in the Fall of 1998 who had graduated from a Texas high school in the prior 12 months, 66 percent went to a Texas public college, 13 percent went to a Texas private college, and 21 percent went

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[5] The college's relative rankings and enrollments in the 1999 Barron's guide (i.e., post-policy) were quite similar.

out-of-state.[6] Although a large majority of college enrollees attend Texas public institutions, overall college enrollment rates are low. Only one-fourth of high school students choose to attend a 4-year college. Thus, the fraction of all 10th graders who enroll in a Texas public college is only about 16 percent.[7] This rate varies by race/ethnicity: 20 percent of white students, 14 percent of black students, 10 percent of Hispanic students, and 38 percent of Asian-American students enroll in a Texas public college.

Since many of these students would have gained admission to their first-choice campus even without the ten percent rule, the fraction of 10th graders who directly benefit from the program is even smaller. We find a very rough estimate that, in the absence of strategic behavior, about 0.5% of all 10th graders would likely benefit from the program due to automatic admission to one of the two large, selective flagship campuses (UT-Austin and Texas A&M).[8] The vast majority of applicants who are in the top decile of their high school class would have been admitted to these campuses even in the absence of the program (Tienda et. al., 2003). Thus, even if only a small number of students respond strategically to the policy, this number could be large relative to the number whose admissions outcomes are affected.

Among the first-time, in-state, undergraduate students who enrolled at Texas public colleges in the summer and fall of 1998, 21 percent automatically qualified by being in the top-

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[6] These figures are estimated using data from the Department of Education (2001) and the Texas Higher Education Coordinating Board (1998).

[7] We calculated this percentage by dividing the number of enrolled students by an estimate of the 10th grade population in 1996-97. The estimate of the 10th grade population is calculated by dividing the total number of public school 10th graders observed in our data by 0.953, which in turn is an estimate of the public school enrollment share, found by dividing the number of 1998-99 Texas private high school graduates by the total number of 1998-99 Texas high school graduates (Department of Education, 2001).

[8] To find this 0.5% estimate, we first estimated the number of students who were rejected from either UT-Austin or Texas A&M for the entering college class of Fall 1997. Based on pre-*Hopwood* rejection rates for top decile students reported by Tienda et. all (2003), 3.8% for Texas A&M and 6.6% for UT-Austin, we estimate that about 380 and 770 top decile students would have been rejected by these campuses respectively. We then divide the sum of these rejections by the number of students in this cohort during tenth grade. To the extent that some of these rejected students would not have chosen this campus anyway or were rejected from both campuses, this estimate overstates the actual fraction of students who would be positively affected. To the extent that applications are endogenous, such that some top decile students were discouraged from applying to these campuses prior to the policy change, this estimate understates the fraction of students who would be positively affected.

ten percent of their high school class. This fraction has increased steadily each year and was 25 percent in the fall of 2001. Table 2 displays the enrollment patterns of automatically admitted first-time students across the public universities during the Summer/Fall of 2000. Among students in the top-ten percent who enrolled, the majority attended either Texas A&M (28.4%) or UT-Austin (29.2%). Only 5% of students enrolled in Texas public universities were automatically admitted at a consequence of being in the top 11-25% of their high school class.

Studies that have examined the impact of the top-ten percent program on racial diversity have found that the program did not restore rates of Black and Hispanic enrollment to those under affirmative action (e.g., Kain & O'Brien, 2001; Bucks, 2003; Horn & Flores, 2003; Tienda et. al., 2003). Table 3 shows, though, that the overall fraction of Blacks and Hispanics enrolled in Texas public institutions has been increasing under the first four years of the program. In addition, the share of enrollment that comes from top-ten percent students has increased for all racial groups—perhaps in part due to strategic selection of high schools by college-bound students.

3. Theoretical Framework for High School Choice

The joint choice of residential location and elementary and secondary schooling derives from a complicated family maximization problem. We presume that the decisions for families with school-aged children are partly driven by the impact that attending one school system over another will have on their children's future earnings. Holding other neighborhood characteristics constant, families will prefer to have access to schools that increase earnings capacity both directly through skills and knowledge acquisition and indirectly by improving access to institutions of higher education. In this setting, the introduction of a top-ten percent policy increases the relative attractiveness of communities in which the child is likely to be in the top-ten percent of the high school graduating class.

In order to provide intuition concerning the relevant strategic responses and the types of families that might take these actions, we present an indirect utility function that each household will seek to maximize. This indirect utility function is defined from the perspective of families of 8th-graders making housing and schooling choices for 10th grade (consistent with the data discussed subsequently). Although behavior between these grades will not capture all of the strategic responses, our empirical analysis is limited to these grades by data constraints. Our goal is to identify whether households are likely to alter their high school plans between 8th and 10th grade following the introduction of the top-ten percent policy. Therefore, we condition on school location as of 8th grade and include only the most relevant economic variables that determine the secondary schooling decision.

For simplicity, assume that families have only one child.[9] Define i as an index for both the family and the child, j as an index for the house/neighborhood where the family resides, and k as the index for the high school the student attends. The child's expected future earnings are affected by the student's own ability level (γ_i),[10] the quality of the student's high school (Q_k), and the likelihood of being accepted at a public Texas college (p_{ik}). Define T_{ik} as an indicator variable, which is equal to one if the child will be in the top-ten percent of the class at school k. For simplicity, we assume that individuals can predict this perfectly. Define *Post* as a dummy variable, equal to one if the top-ten percent admissions policy is in place. Then, the student's unconditional likelihood of being accepted at a public Texas college is the following: $p_{ik} =$

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[9] Within our framework, the presence of multiple children may be viewed similarly as other non-schooling related factors that influence a family's housing choice.

[10] The ability measure γ_i can be thought of as a combination of the student's innate ability and the amount of learning that takes place in the years preceding high school.

Max[$T_{ik} \times Post$, $a(\gamma_i, Q_k)$] $\times c(\gamma_i, Q_k)$, where $a()$ is the regular admissions system and $c()$ is the student's likelihood of applying to a public Texas college, both of which are functions of the student's ability and the quality of the student's high school.[11] The child's expected future earnings are thus given by $e_i(\gamma_i, Q_k, p_{ik})$.

In addition to the child's future earnings, the family's indirect utility is a function of neighborhood characteristics (N_j), housing prices inclusive of property taxes (P_j), tuition prices if school k is a private school (τ_k), and transportation costs from neighborhood j to school k (d_{jk}). If the family chooses to move to a new neighborhood for high school, this will involve fixed mobility costs (M_{ij}). Indirect utility is given by the following:

$$(3.1) \quad V_{ijk} = v_i\,(e_i(\gamma_i, Q_k, p_{ik})\,,\, N_j,\, P_j,\, \tau_k,\, d_{jk},\, M_{ij})$$

The family will then choose the neighborhood and high school combination that maximizes their indirect utility (subject to the constraint that, depending on the schools' transferring policies, some neighborhood and school combinations will not be allowed).[12]

For the 1993 to 1995 8th grade cohorts that we follow, we take their 10th grade locations ($j°, k°$) to be the outcomes of the family optimizations in the absence of the top-ten percent policy. In contrast, the locations (j', k') of the cohort that transitions to 10th grade after the

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[11] If newly accepted students displace students who would otherwise have been accepted, then $a()$ could change post-policy. We abstract from this here, though general reductions in the likelihood of admission across students not in the top-ten percent would tend to reinforce the strategic incentive to attend a school where the student expects to perform relatively better than most peers. It is also possible that $c()$ changes post-policy. Our empirical approach implicitly assumes that there is not a systematic reversal of the ranking of students in terms of their (unconditional on applying) propensities to be accepted or rejected by a public college.

[12] There are several programs that Texas school districts use to permit transfers without changes of residence. Based on the survey responses of school administrators from 277 Texas school districts for the 1993-94 school year, an average of 1.6 percent of a district's students were transfer students who reside in other districts (National Center for Education Statistics, Schools and Staffing Survey, 1993-94). While some of these inter-district transfers were permitted based on special arrangements, approximately 18 percent of these districts formally offered inter-district transfer opportunities. Only 5 percent of the districts surveyed reported that an intra-district choice program was offered, and these were typically the large urban districts. For example, the Houston Independent School District offers a variety of transfer options including magnet programs, majority-to-minority transfers (where the student transfers from a school where her race/ethnicity is in the majority to a school where her

reform will reflect changes in the indirect utility provided by different combinations. We assume that general equilibrium effects on housing prices, neighborhood characteristics, school quality, and tuition are likely to be trivial after only two years of policy implementation.[13] Relative to the counterfactual of no reform, family choices for the second cohort will differ due to changes in their relative valuations of different schools that arise from changes in p_{ik}. A family will alter its plans only if it is true that $V_{ij'k'} > V_{ij^{\circ}k^{\circ}}$ for some feasible j' and k'.

Starting from a family's pre-reform ranking of options, only those neighborhoods and schools where the child would end up being in the top-ten percent become relatively more attractive than before. If $T_{ik} = 1$, then $\frac{\partial \mathrm{p}_{\mathrm{ik}}}{\partial \mathrm{Post}} = \left(1 - a(\gamma_i, Q_k)\right) \times c(\gamma_i, Q_k)$ is positive as the child's chances of being admitted to a Texas public college increases to 100 percent. For schools where $T_{ik} = 0$, $\frac{\partial p_{ik}}{\partial Post}$ is likely to be negative due to spillover effects to the merit-based admissions system, though we did not explicitly model this link. This implies that $\frac{\partial V_{ijk}}{\partial Post}$ will increase if $T_{ik} = 1$ and decrease if $T_{ik} = 0$, as long as indirect utility is increasing in this admissions probability. This would be the case, for example, if the child's γ_i is within a range such that the parents are not certain that the child will be admitted to a Texas public college, but feel that there are positive net benefits associated with attending this type of college.

The key prediction, then, is that any student who strategically chooses a high school other than the one that would have been chosen before the policy reform should be more likely to attend a school where he/she expects to be in the top-ten percent of the graduating class. The

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race/ethnicity is in the minority), transfers to schools with "underutilized space," and transfers from low-performing schools. Of the districts in our sample, 22 percent contain more than one regular or magnet high school.

most likely form of behavioral response would be remaining in the same home, but choosing another schooling alternative. The incentives created by the top-ten percent program are not likely strong enough to marginally induce families to change residences. However, for those families who would have moved anyway, the policy change could affect where they move to.

These partial equilibrium effects should increase the academic ability of students in the top-ten percent at any given high school. In the absence of general equilibrium effects due to changes in prices or peer quality, the only students whose high school enrollment choices are affected by the policy are those who would otherwise choose a school where they would not be in the top-ten percent. By "trading down," these strategic students thus raise the mean and the minimum level of academic ability within the top decile at the school they choose to attend. At the same time, the strategic students do not directly affect the academic abilities of the top decile at the school they would have attended in the absence of the ten-percent admissions program, because they would not have been in the top-ten percent at these schools. Therefore, strategic behavior should raise the mean and minimum level of academic ability in schools' top deciles and alter the distribution of top-ten percent thresholds across high schools in the state. Thresholds at relatively low-achieving schools will tend to converge toward those at higher-achieving schools. In the extreme, if mobility is costless and if all students in the top-decile of the state's ability distribution have a motive to behave strategically, then we would expect the top-ten percent of each high school to *only* include students in the top decile of the state's distribution.

Our framework also has implications for which students' high school choices are most likely to be affected by the possibility of automatic admission. Students with the greatest

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[13] The policy change should increase house prices in communities with low quality schools, since it is these schools where access to selective higher education institutions is improved the most. These capitalization effects would reduce the incentives for

propensity to apply to *and* be rejected by a public Texas college should be affected the most, since $\frac{\partial p_{ik}}{\partial Post}$ at schools where the student can place in the top-ten percent is simply equal to the *unconditional* likelihood of being rejected. Students with very low ability may have very large changes in the likelihood of admission to a Texas public college given attendance at some schools, *k*. Yet given these students' low likelihoods of applying to college (i.e., low *c()*), they will have small values of $\frac{\partial p_{ik}}{\partial Post}$ and thus little change in their families' rankings of schools.

Holding the admissions motive constant, the net benefit of attending a high school where a student is in the top-ten percent will vary by ability and by location via the associated changes in Q_k. In order to enroll in a top-ten percent school, a low ability or geographically isolated student may have to travel farther or attend a school with very low peer achievement. In our empirical analyses, we identify treatment groups of students with the greatest motives and opportunities to obtain top-ten percent positioning.

4. Data

4.1 Primary Data

The primary data source for our analysis is individual-level Texas Assessment of Academic Skills (TAAS) test score data collected by the Texas Education Agency (TEA). In the Spring of each year, students are tested in reading and math in grades 3-8 and 10, and writing in grades 4, 8, and 10. Each school submits test documents for all students enrolled in every tested grade. These documents include information on students that are exempted from taking the exams due to special education and limited English proficiency (LEP) status, and students in the

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strategic transfers to lower average quality schools over time.

10th grade who have passed alternative end-of-course exams and are not required to take the TAAS exams. The test score files, therefore, capture the universe of students in the tested grades in each year. In addition to test scores, the reports include the student's school, grade, race/ethnicity, and indicators of economic disadvantage, migrant status, special education, and limited English proficiency. TEA provided us with a unique identification number for each student. This number is used to track the same student across years, as long as the student remains within the Texas public school system.[14]

For our empirical tests, we focus on the transitions of individual students from junior high school campuses in 8th grade to high school campuses in 10th grade as revealed by the school identifiers in the test score documents. While strategic mobility could continue to occur after the Spring of 10th grade, this mobility is limited by each high school's policy on inclusion of latter-year transfers in their top-ten percent. We follow six cohorts as they make this transition, beginning with Cohort A (1993 8th-graders) and ending with Cohort F (1997 8th-graders), where what we identify as a cohort's 8th-grade year is based on the Spring of the school year. The first three cohorts attended 10th grade under the old admissions regime, while the latter three cohorts attended 10th grade after the new policy had been introduced. The first five cohorts would have chosen their 8th grade schools under the old regime, so that these locations are not

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[14] There appears to be relatively little noise in the matching process. Across our six cohorts, 71% of 8th-graders are observed in the 10th grade data two years hence. The loss can be almost entirely explained by students who are retained or who leave legitimately by dropping out, transferring to the private sector, or moving out of the state. On average, aggregate Fall enrollment of 10th grade students is 6.1% smaller than Fall enrollment of the matching 8th grade cohort (authors' calculations based on data from the Texas Education Agency's Academic Excellence Indicator System). This reduction in cohort size consists of dropouts and net flows to the private sector and other states. Due to students dropping out during the 10th grade school year, the number of 10th graders observed in the Spring test documents is 4.5% less than Fall enrollment. These two factors combined yield a cohort size reduction of 10.3%, giving an upper bound on the share of 8th graders that arrive in 10th grade with their cohort of 89.7%. However, not all students in the 10th grade cohort would have been in a Texas public 8th grade two years prior. We find that 4.2% of 10th graders were retained once in either the 8th or 9th grade, and the Texas Education Agency reports that in the 1997-98 school year "nearly 10% of all 9th graders are students who were not enrolled in TX public schools in the prior year" (http://www.tea.state.tx.us/perfreport/snapshot/98/text/agency.html). These factors cumulatively would predict that only 77% of 8th graders should be present in the 10th grade data two years hence. This is an over-estimate since it does not include students who were retained more than one year or 10th graders who were not enrolled in Texas public schools in the prior year. With these additional factors, we are confident that most students are properly tracked.

endogenous to the policy change. Cohort F began 8th grade in the Fall of 1997, while the new policy was signed by Governor Bush on May 20, 1997 and became effective on September 1, 1997. Thus, this cohort also had little scope to adjust 8th grade campus choices and we also treat these as predetermined.

We rely on the early cohorts to establish the pre-policy 10th-grade attendance patterns for 8th graders from each middle school. We then explore how these patterns change for the later cohorts whose transitions are affected by the new policy regime. We analyze three aspects of the high school choice: the threshold for getting into the top-ten percent at the high school attended, the probability of remaining at the high school a student's middle school has a feeder relationship with, and the probability of choosing an alternative high school that offers the student a top-ten percent placement. We use variations of differences-in-differences estimation approaches that are based on comparing high schooling choices before and after the policy change across students with greater and lesser incentives to alter their high school plans in order to guarantee college admission.

4.2 Predicting Students' Ranks and Motives

In order to test how high school attendance choices vary with a student's incentives, we would like to be able to predict a student's class rank at any school the student might attend. However, the only outcome variables that we have available to us in the individual-level Texas data are standardized test scores. We, therefore, conduct preliminary analysis using data from the third follow-up of the National Education Longitudinal Study (NELS) to determine the relationship between test scores and class rank.

The NELS surveyed a nationally representative sample of 8th grade students in 1988.[15]

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[15] Students were selected through a two-stage sampling frame, where schools were first selected and then students were randomly selected within schools. The weights appropriate to obtaining a representative student-level sample are provided.

These students were then followed as they progressed to 10th and 12th grade in 1990 and 1992. Students were tested in reading and math in the base survey, and were asked to provide their class rank in their senior year in the second follow-up. We transform the reading and math test scores to z-scores, and then regress 12th grade percentile rank on these z-scores, including high school fixed effects. We are assuming that higher test scores are associated with a higher class rank regardless of the high school, and include the school fixed effects to account for the fact that a given score will be associated with a lower rank if the student is in a school with more academically talented peers.

Table 4 shows the results for the national sample and separately for Texas students. In the weighted regressions, observations are weighted using the longitudinal student sample weight. For both the nation as a whole and for Texas, math and reading test scores explain slightly more than one third of the variation in class rank within schools. The results are not sensitive to weighting, but we find that the relative importance of math scores is somewhat greater in Texas than in the nation as a whole.

We create a composite test score for each student, which is the weighted average of the student's reading and math z-scores, with the weights proportional to the coefficients from the weighted Texas results. The reading z-score receives a weight of 0.289, and the math z-score is weighted by 0.711.[16] We use the composite score to assign all students to a strict statewide percentile ranking within their 8th grade cohort (r_{is}).

To determine the expected rank for an 8th-grader within any given potential 10th-grade campus (r_{ik}), we use the distribution of the 8th-grade composite scores for actual 10th grade

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[16] We separately estimated the relationship between 10th grade test scores and class rank. The weights were similar: 0.227 for reading and 0.773 for math. The relative importance of math scores is consistent with prior studies' findings. For example, using data from the High School and Beyond, Hanushek et al. (1996) find that the weight on the math test score in predicting the probability that sophomores continue in high school to 12th grade is three times greater than the weight on the reading score.

attendees.[17] After mapping composite scores to statewide percentile ranks within their 8th-grade cohort for all 10th grade students, we determine the top-ten percent threshold at each high school campus ($\hat{r}_k$) by year as the minimum r_{is} among 10th-graders within the top decile.

For each 8th grade campus, we then define one high school as the natural choice for students in this 8th grade school. We label this natural choice the "on-track" high school and define it as the 10th grade school attended by the highest percentage of the 8th graders from a particular junior high school.[18] Determination of the on-track high school is reasonably straightforward for most junior high schools.[19] For the median 8th grader, 90 percent of his or her classmates who remain in the Texas public school system attend the on-track high school. We can then readily determine whether an 8th-grader is predicted to be a top-ten percent student at the on-track high school, given the student's own statewide percentile rank and that school's threshold. We also determine whether the student could place within the top-ten percent at any nearby (within 10 or 30 miles) campus, and whether such an opportunity exists without too great a sacrifice in peer quality (a fall of less than 10 percentile points in the median student's statewide rank).

In conjunction with positioning within the on-track and neighboring schools, we

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[17] Some students are missing either or both scores. Around 29 percent of 10th graders are missing 8th grade test scores. The rate of missing scores is around 10 percent excluding 10th grade students who were not in a Texas public 8th grade with their cohort, falling from 11.3 percent in 1995 to 8.9 percent in 2000. Students may be missing test scores due to exemptions for limited English proficiency or special education status, to absence or illness on the day of the exam, or for some other idiosyncratic reason. If the student's 8th grade scores were missing, and if they were not exempted from taking a specific exam due to special needs, we impute the missing score from the set of valid data for reading, math, and writing test scores from both the 8th and 10th grade administrations and these test scores squared and cubed. If these students test scores were still missing, we imputed their scores using the average scores for students who were coded with the same reasons for missing or taking the various tests. For students that are exempt due to special needs in that subject area, we impute the score from the same 10th grade exam if that score is non-missing, and otherwise assign the student the minimum score on that exam. Further details of imputation procedures are available from the authors.

[18] We exclude students who are retained in 8th or 9th grade or skip 9th grade when determining the on-track campus. High school information from retained students is unavailable for 1998, so we cannot treat this group consistently for all years. Students who skip 9th grade are more likely to come from alternative schools or go to alternative schools, and are thus not likely to provide general information on structural moves from middle to high school.

[19] For a small number of 8th grade campuses, two or more 10th grade campuses tied as the on-track campus. In these cases, we determined the on-track campus by choosing the 10th grade campus with the largest average share across six years. An on-track

distinguish the students by motivation to behave strategically using the predicted probability of having an application rejected by a public college. We again rely on the Texas students in the NELS data to predict these probabilities.[20] Students in the NELS are asked in their senior year of high school to list their first and second choice colleges to which they had applied and whether they had been accepted.[21]

Table 5 shows the rates of application to and rejection (unconditional on application) by public colleges, by college selectivity and student's predicted high school class rank in the NELS. As expected, students in the top of their high school class are the most likely to apply to a public college, particularly for the more selective public colleges. The probability of rejection peaks for students in the 2nd or 3rd decile of their high school class. While the top-decile students are more likely to apply than 2nd or 3rd decile students, they are less likely to be rejected conditional on application and the latter effect outweighs the former.

In order to predict students' application behavior and admission outcomes, we run a Probit regression of a dummy variable for applied or rejected on the student's composite 8th grade score, this score squared, and the fraction of the student's 12th grade classmates (who were interviewed for the NELS) who took the SAT or ACT. The fraction of peers taking the college entrance exams provides a useful summary statistic for a whole host of high school and location specific attributes that affects the propensity to apply to a public college. Table 6 presents the

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10th grade campus could not be identified for 0.2% of students in the sample. Of these students, 94% were in a special education or alternative 8th grade school.

[20] We separately used all students in the NELS data with similar results. Also, to check the validity of our approach, we applied a modification of the Tienda et al. (2003) Table 4 specification to the NELS students. They examined the probability of admission to UT-Austin and Texas A&M using actual applicant and admissions data. For our left hand side variable, we create a dummy variable which equals one if the NELS student was accepted by a public college that was rated "very competitive" or higher by Barron's 1992 guide. We included the same right hand side variables (with the exception of "feeder high school", which was omitted, and "high school with immigrants," which was proxied by "high school with limited English proficient students"). All of the signs of the estimated parameters matched.

[21] For our purposes, the NELS question is perfectly suited, because we want to know the set of colleges that the student particularly cares about. Also, note that students were re-interviewed two years later and missing acceptance data was filled in.

results. The coefficients are as expected: own score and the fraction of classmates taking college entrance exams are positive predictors for both application and rejection, while own score squared enters negatively in both cases. We then apply these coefficients to the students in the TAAS data, using own 8th grade composite score and the percentage of students who take the SAT or ACT (averaged over the fiscal years 1995 to 1999) at the on-track high school as the predictors.

The baseline sample for our analyses of 8th to 10th grade transitions excludes students for whom motives cannot be well-measured. First, we drop students in 8th grade campuses or with on-track high schools that are very small, special education, or alternative.[22] Second, we drop students who are missing information on the percentage who take the SAT at their on-track high school or missing demographic information. These restrictions eliminate 4-6% of our sample in each cohort. Finally, we balance the panel by dropping students in 8th grade campuses that do not exist in all cohorts. After doing so, we are left with 87 percent of our original sample (declining from 91 percent of Cohort A to 83 percent of Cohort F).

5. Empirical Strategies and Results

5.1 Exploratory Distributional Analysis

We begin with exploratory tests of the predictions that came out of the theoretical model regarding the composition of students in the top-ten percent using pooled cross-sectional analysis of our 10th-grade cohorts. Recall that we have computed the statewide percentile rank within their 8th grade cohort for all 10th grade students as described above, and have determined the threshold for placing in the top-ten percent within each high school campus. We can then

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[22] An 8th grade campus is defined as very small if there are less than 20 students in the 8th grade during any of the six years. The campus is defined as a special education campus if more than half of its 8th grade students are special education students.

identify whether or not each student falls in the top-ten percent at the campus attended.

The results are consistent with, though clearly not proof of, strategic mobility. Figure 1 shows the average "ability" level of students who are in the top-ten percent of their high school class. This "ability" level is the student's percentile rank in the statewide distribution using the weighted average of his or her 8th grade test scores. As predicted, the average ability level increased pre-policy (1995-97) to post-policy (1998-00) from an average percentile rank of 92.61 to 92.94.[23] To test the statistical significance of this change, we regress the average score for the students in the top-ten percent of each high school on a post-policy dummy variable. The regressions are run in three different ways: ordinary least squares (OLS), OLS with campus fixed effects, and OLS with campus fixed trends.[24] The OLS estimates suggest that the 0.33 percentage point increase described above represents a statistically significant change (t-statistic of 3.53 with campus-clustered robust standard errors). The campus fixed effect and campus fixed trend estimates were similar (0.33 and 0.32, respectively) and were statistically significant (t-statistics of 3.53 and 2.94, respectively).

We would also expect the movers to displace other students who would have been in the top-ten percent of their high school, so that the thresholds should rise. Figure 2 shows the mean threshold to get into the top-ten percent for each of the sample years. Consistent with our prediction, the mean threshold increased from a percentile rank of 87.55 (average over the pre-policy years) to 87.96 (average over the post-policy years). Regression-based tests analogous to those described above suggest that the post-policy average threshold increased by 0.38 to 0.41

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[23] For this analysis, we exclude small, special education, and alternative schools and restrict the sample to those 10th grade campuses that existed in for all six cohorts of our data. Further, campuses are weighted using their average enrollment over this period.

[24] We additionally employ a two-step procedure where we extract coefficients on year dummy variables from the first step regressions of the average score for students in the top-ten percent of each high school on the year dummies and other controls. In the second-step, we regress the six coefficients on a post-policy indicator variable and calculate robust standard errors. Allowing for unspecified correlation within campuses over time as we do in the one-step approach discussed in the text yields

percentage points, with t-statistics ranging from 2.50 to 3.03.

The above findings are consistent with an increase in the share of students in the top-decile of their high school who come from the upper ranges of the Texas distribution. In the pre-policy period, 74.8% of students in the top decile of their high school were also in the top decile of the state distribution. In the post-policy period, this fraction increased to 78.2%. Students who are in the third decile of the state distribution have lost representation in the top-ten percent of their high school classes. These trends are shown in Figure 3. Figure 4 gives more detail on this change in the distribution and shows the probability density function of students in the top decile of their high school for the pre- and post-policy years. Here we see a shift of the distribution towards higher ability students. In particular, we observe a decline in the share for students below the 86th percentile of the state distribution, and a gain for students in the 86th to the 98th percentiles.[25] These distributional shifts are all consistent with strategic mobility in response to the top-ten percent policy but are very indirect tests. The tests described below based on 8th to 10th grade transitions provide more direct evidence.

5.2 Threshold at high school attended

For the first test of strategic transitions, we relate the threshold at the high school the student attends to the student's motivation to behave strategically. Students in 8th grade with high potential gains will transfer to high schools with lower thresholds (and thus lower average peer ability) after the policy is introduced. Thus, we predict that the threshold at the actual high school attended should fall for high motivation students, while the threshold will actually rise on average for other students since the thresholds will be pushed up by those who relocate.

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standard errors that are generally twice as high than in these two-step procedures. Thus, we present conservative estimates of the precision of our coefficient of interest.

[25] The drop-off in the distribution at the 99th percentile is the caused by a higher rate of 8th to 10th grade attrition for these students relative to students at other points in the distribution. Recall that percentile rank is defined to be within a student's 8th grade cohort. If all students were equally likely to show up in 10th grade, we would not observe this drop-off.

For this analysis, we begin by restricting the sample to those who remain within the TX public school system between 8th and 10th grades, and who attend 10th grade in the same year as the rest of their cohort. In 1993, 68.6% remain, and this rate rises steadily to 71.6% by 1998. To deal with the possibility that some students who would have disappeared (in the absence of the policy) now show up in our data, we include a specification test based on a control function approach. We calculate a cubic in the fraction of a student's 8th grade peers that leave that are within the same ability quintile at the campus, and include this cubic in the control set.

Define $Post_i$ as an indicator for whether the student attends 10th grade after the policy is implemented. Our measure of the student's motivation (M_i) is based on the predicted unconditional probability of rejection at any public college. We use ordinary least squares regressions of the following form:

$$(5.1) \quad Threshold_{i\kappa t} = \alpha + \beta_1 \times Post_t + \beta_2 \times M_i + \beta_3 \times Post_t \times M_i + \eta \times Trend_t + v_\kappa + \varepsilon_{i\kappa t},$$

where *Trend* indicates the year (with 1995 normalized to one) and the vector v_κ includes (8th grade campus × ability quintile) fixed effects. Including fixed effects is important because the threshold of the high school that the student may attend depends on their middle school locations, and also likely varies by ability within locations. β_4 measures the degree to which thresholds are increasing or decreasing statewide for secular reasons. We anticipate that β_1 will be positive, and that β_3 will be negative. β_3 captures the change in the relationship between the student's motivation to behave strategically and the student's high school threshold after the policy change. The magnitude of the coefficient on the interaction term is readily interpretable since we have normalized M_i to have a mean of zero and standard deviation of one in the full sample. The identifying assumption for this to be interpretable as a response to the policy change is that students in the later cohort would otherwise have made the same transitions as students of similar ability who attended the same middle school in prior years.

In alternative specifications that attempt to deal more convincingly with underlying time trends, we estimate models with fixed trends at the 8th grade campus × ability quintile level (i.e., we replace with the parameter η with the vector of parameters η_{κ}). We also try i) restricting the sample to students in 8th grade campuses with no apparent changes in high school opportunities, and ii) using high school thresholds that are not time-varying (defined to be the average over the period) as the dependent variable. For ii), the only changes over time have to come from students choosing alternative high schools (and, hence, we no longer have a prediction about the sign of β_1). To reduce the potential role that outliers might play in the analysis, we exclude the one percent of students who attend very small or alternative high schools in all of the regressions. All standard errors are clustered at the same level as the fixed effects.

The baseline results are shown in Table 7.

[To be added.]

5.3 Probability of remaining at the on-track high school

For this test, we divide students into two groups: those who we predict to be in the top-ten percent of their on-track high school class, and all other students. We then predict that students who will be in the top-ten percent should be more likely to attend this on-track high school post policy, particularly if they otherwise have a chance of being rejected at a public college. Students who are not predicted to be in the top-ten percent of their on-track high school have the opposite incentive and should be more likely to leave (to attend a high school where they are predicted to be in the top decile).

[To be added.]

5.4 Probability of choosing an alternative high school with a top-ten percent opportunity

We predict that students who are not expected to be in the top-ten percent of their on-track high school should be more likely to transfer to other high schools where they will be in the top-ten percent after the policy is implemented.

[To be added.]

6. Conclusions

Texas's top-ten percent program was instituted in 1998 after the elimination of affirmative action following the 1996 *Hopwood v. Texas* decision. The explicit goal of this program was to maintain minority college enrollment, particularly at Texas' selective public universities. However, by basing this admission possibility on school-specific standards, the policy encourages strategic high school enrollment that might both change the composition of the eligible population and more generally reduce the degree of sorting by ability across high schools.

We find evidence that students and families did change their behavior in a strategic manner after the policy was instituted. Conditional on their 8th grade campus, students who were likely to be in the top-ten percent of their "on-track" high school with the highest motivation to behave tactically were more likely to attend this high school after the policy was implemented. Secondly, students who were not expected to be in the top-ten percent of their "on-track" high school were found to transfer to other high schools where they would qualify. This strategic mobility has changed the composition of beneficiaries of the new program. It has raised the average ability level of these qualifiers and raised the average high school thresholds for qualification.

While the implied numbers of strategic movers is small, the long-run response to the program is likely to be greater. Even three years after the implementation of new policy, 700 Texas high schools did not send any students to the University of Texas at Austin and 74 high schools produced half of the entering class (Selingo, 2001). As the number of high schools who send students to the state's selective colleges increase, we might expect more students and families to become aware of the value of strategic high school choice.

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Table 1: Selectivity of Texas Public Schools Prior to Automatic Admissions Rules

University	Automatic Admissions Rule Used in 2002-03	Admissions Selectivity (for Freshman Class of 1995-96)							
		Barron's Selectivity Rating	Total First-time Enrolled	% of App.'s Accepted	Median ACT	Median SAT Verbal	Median SAT Math	% Top 1/5 of HS Class	% Top 2/5 of HS Class
Texas A&M	Top 10%	Highly Comp.	6072	69%	25	500	590	78%	95%
U. of Texas- Austin	Top 10%	Very Comp.	6352	67%	26	1150 Combined		46%	79%
U. of Texas- Dallas	Top 10%	Very Comp.	471	75%	26	530	620	62%	87%
Texas Tech	Top 10%	Competitive	3538	81%	22	465	545	43%	78%
Southwest Texas State	Top 10%	Competitive	2533	65%	22	458	513	48%	86%
University of Houston	Top 10%	Competitive	2218	61%	21	450	520	49%	78%
U. of Texas- San Antonio	Top 10%	Competitive	1578	74%	20	418	468	42%	74%
University of North Texas	Top 10%	Competitive	2583	74%	N/A	N/A	N/A	26%	36%
U. of Texas- Arlington	Top 10%	Less Comp.	1648	91%	21	420	500	40%	70%
Texas A&M- Galveston	Top 10%	Less Comp.	N/A	87%	N/A	N/A	N/A	N/A	N/A
Sul Ross State	Top 10%	Noncomp.	428	83%	17	350	400	14%	36%
Prairie View A&M	Top 10%	Noncomp.	1069	99%	N/A	N/A	N/A	N/A	N/A
Stephen F. Austin State	Top 25%	Competitive	1855	74%	20	486	491	N/A	N/A
Texas A&M- Commerce	Top 25%	Competitive	720	64%	21	430	474	N/A	N/A
Sam Houston State	Top 25%	Competitive	1638	77%	N/A	N/A	N/A	41%	N/A
Texas Women's	Top 25%	Less Comp.	431	79%	N/A	N/A	N/A	N/A	N/A
Tarleton State	Top 25%	Less Comp.	1057	91%	N/A	484	490	26%	56%
Angelo State	Top 50%	Competitive	1109	78%	21	505	517	40%	71%
West Texas A&M	Top 50%	Competitive	923	92%	N/A	N/A	N/A	38%	79%
U. of Texas- El Paso	Top 50%	Less Comp.	1908	81%	N/A	N/A	N/A	N/A	N/A
Lamar	Top 50%	Less Comp.	3150	86%	N/A	488	477	N/A	N/A
Texas Southern	Open	Competitive	1872	70%	19	420	430	25%	70%
Texas A&M- Kingsville	Open	Less Comp.	922	86%	18	N/A	N/A	35%	66%

Other Small Satellites: Top 10%: Texas A&M-Corpus Cristi, UT-Tyler; Top 25%: UT-Permian Basin; Top 50%: Texas A&M International; Open: U of Houston-Victoria

Table 2: Proportion of Public Universities' In-State Enrollments Composed of Top 10% & Top 25% First-time Students, Summer/Fall 2000

University	**Automatic Admissions Rule**	**Total Enrollment**	**Total In-State Enrollment**	**Automatic Admittance: Top 11-25% of High School**	**Enrollment of Top 10% Students**	
					As Percent of Statewide Top 10% Applicants	**As Percent of Statewide Top 10% Enrolled**
STATE TOTALS	-	*52,666*	*46,611*	*5%*	*75.4%*	*100.0%*
Texas A&M	Top 10%	6,685	6,305	N/A	21.4%	28.4%
U. of Texas- Austin	Top 10%	7,684	7,074	N/A	22.0%	29.2%
U. of Texas- Dallas	Top 10%	840	625	N/A	0.9%	1.2%
Texas Tech	Top 10%	4,106	3,793	N/A	4.9%	6.5%
Southwest Texas State	Top 10%	2,625	2,028	N/A	1.4%	1.9%
University of Houston	Top 10%	3,135	2,963	N/A	4.0%	5.3%
U. of Texas- San Antonio	Top 10%	1,828	1,782	N/A	1.4%	1.9%
University of North Texas	Top 10%	2,969	2,698	N/A	2.6%	3.5%
U. of Texas- Arlington	Top 10%	1,685	1,602	N/A	2.1%	2.8%
Texas A&M- Galveston	Top 10%	428	335	N/A	0.3%	0.3%
Sul Ross State	Top 10%	268	230	N/A	0.1%	0.1%
Prairie View A&M	Top 10%	1,346	404	N/A	0.4%	0.5%
Texas A&M-Corpus Cristi	Top 10%	851	810	N/A	0.9%	1.2%
U. of Texas- Tyler	Top 10%	178	169	N/A	0.4%	0.6%
Stephen F. Austin State	Top 25%	2,274	2,229	0%	1.9%	2.6%
Texas A&M- Commerce	Top 25%	624	476	17%	0.3%	0.4%
Sam Houston State	Top 25%	1,713	1,682	0%	0.0%	0.0%
Texas Women's	Top 25%	431	369	22%	0.4%	0.5%
Tarleton State	Top 25%	745	681	19%	0.4%	0.6%
U. Texas-Permian Basin	Top 25%	150	142	27%	0.2%	0.2%
Angelo State	Top 50%	1,287	1,132	19%	1.1%	1.4%
West Texas A&M	Top 50%	901	619	0%	0.8%	0.1%
U. of Texas- El Paso	Top 50%	2,238	1,863	15%	1.5%	2.0%
Lamar	Top 50%	1,218	1,044	17%	0.7%	1.0%
Texas A&M- International	Top 50%	317	238	20%	0.3%	0.5%
Texas Southern	Open	1,090	917	12%	0.4%	0.6%
Texas A&M- Kingsville	Open	990	960	20%	0.8%	1.1%
U. of Houston-Victoria	Open	998	773	0%	0.0%	0.0%

Source: Data from Texas Higher Education Coordinating Board (2002)

Table 3
Racial Composition of In-State, First-Time Students Enrolled in 4-Year Texas Public Universities, Summer/Fall 1998-2001

		White		Black		Hispanic		Asian		Total	
	Year	Top 10%	Other	Top 10%	Other	Top 10%	Other	Top 10%	Other	Top 10%	Other
Percent of All, In-State Enrollees	1998	14.1%	47.0%	1.4%	10.0%	3.5%	17.2%	2.1%	4.1%	21.2%	78.8%
	1999	15.4%	45.5%	1.6%	10.1%	4.3%	16.0%	2.3%	4.0%	23.7%	76.3%
	2000	15.5%	44.3%	1.6%	9.5%	4.5%	16.9%	2.5%	4.2%	24.4%	75.6%
	2001	16.1%	42.2%	1.7%	10.4%	5.1%	16.9%	2.4%	4.3%	25.5%	74.5%
Percent of UT-Austin, In-State Enrollees	1998	24.4%	40.7%	1.1%	1.9%	6.6%	7.2%	8.3%	9.1%	40.6%	59.4%
	1999	24.4%	38.9%	2.4%	1.7%	7.6%	6.8%	9.1%	8.7%	43.7%	56.3%
	2000	27.1%	36.4%	2.2%	1.8%	8.3%	5.8%	9.2%	8.7%	46.9%	53.1%
	2001	29.2%	31.4%	2.1%	1.4%	8.5%	6.4%	10.7%	9.3%	51.0%	49.0%
Percent of Texas A&M, In-State Enrollees	1998	34.6%	48.2%	0.9%	1.7%	4.6%	4.7%	1.5%	1.9%	42.3%	57.7%
	1999	38.9%	45.4%	1.0%	1.6%	4.6%	4.0%	0.2%	0.3%	46.5%	53.5%
	2000	41.5%	39.6%	1.2%	1.3%	5.3%	4.9%	2.0%	1.8%	51.1%	48.9%
	2001	43.0%	39.3%	1.6%	1.4%	6.0%	4.3%	2.0%	1.3%	53.1%	46.9%

Source: Data from Texas Higher Education Coordinating Board (2002)

Table 4
Class Rank Estimated Using Reading and Math Test Scores

		Texas		National	
		Unweighted	**Weighted**	**Unweighted**	**Weighted**
Using 8th Grade Test Scores	Reading z-score	0.056	0.057	0.069	0.071
		(0.010)	(0.013)	(0.003)	(0.004)
	Math z-score	0.134	0.141	0.130	0.131
		(0.011)	(0.012)	(0.003)	(0.004)
	Observations	793	774	11,572	11,031
	Adjusted R^2	0.376	0.378	0.360	0.371
	Implied Reading Weight	0.294	0.289	0.346	0.351
Using 10th Grade Test Scores	Reading z-score	0.047	0.050	0.064	0.065
		(0.011)	(0.012)	(0.003)	(0.004)
	Math z-score	0.165	0.170	0.148	0.153
		(0.011)	(0.012)	(0.003)	(0.004)
	Observations	864	846	12,097	11,800
	Adjusted R^2	0.445	0.466	0.409	0.428
	Implied Reading Weight	0.224	0.227	0.302	0.297

Standard Errors are in Parentheses Below the Coefficients.
Data from the National Education Longitudinal Study.

Table 5
Application and Rejection by College Selectivity and Student's Predicted Class Rank

		Applied to a Public College by Selectivity:			Rejected by a Public College by Selectivity:		
		Very Competitive* (or Higher)	**Competitive* (or Higher)**	**Any College**	**Very Competitive* (or Higher)**	**Competitive* (or Higher)**	**Any College**
Overall		*11%*	*21%*	*28%*	*1.7%*	*3.6%*	*4.4%*
Predicted High School Class Rank Decile	Top	37%	51%	53%	1.3%	3.8%	5.5%
	2nd	23%	44%	51%	5.2%	8.4%	10.0%
	3rd	23%	36%	45%	7.3%	8.2%	9.9%
	4th	14%	32%	39%	1.7%	5.2%	5.6%
	5th	6%	17%	30%	0.9%	5.1%	5.5%
	6th	2%	12%	17%	0.0%	1.0%	1.6%
	7th	7%	15%	20%	0.0%	3.0%	3.0%
	8th	1%	8%	13%	1.4%	1.8%	1.8%
	9th	0%	7%	16%	0.0%	1.3%	2.1%
	Bottom	0%	0%	4%	0.0%	0.5%	1.3%
	Missing	2%	3%	3%	0.0%	0.0%	0.0%

Data from Texas Students in the National Education Longitudinal Study.
* Selectivity Defined by Barron’s Profiles of American Colleges, 21st Edition.

Table 6
Prediction of Application and Rejection by College Selectivity

		Applied to a Public College by Selectivity:			Rejected by a Public College by Selectivity:		
		Very Competitive* (or Higher)	Competitive* (or Higher)	Any College	Very Competitive* (or Higher)	Competitive* (or Higher)	Any College
Texas Students	Composite score	0.919	0.625	0.519	0.493	0.251	0.197
		(0.163)	(0.111)	(0.100)	(0.317)	(0.152)	(0.133)
	Composite score squared	-0.208	-0.148	-0.146	-0.194	-0.167	-0.104
		(0.088)	(0.066)	(0.060)	(0.198)	(0.121)	(0.101)
	% of Peers Taking SAT/ACT	0.132	0.141	0.112	0.184	0.136	0.113
		(0.073)	(0.069)	(0.061)	(0.124)	(0.088)	(0.080)
	Constant	-1.348	-0.658	-0.378	-2.116	-1.601	-1.547
		(0.094)	(0.067)	(0.066)	(0.158)	(0.118)	(0.110)
	Observations	804	807	810	798	799	800
	Psuedo-R2	0.184	0.117	0.083	0.069	0.029	0.019
All Students	Composite score	0.521	0.503	0.469	0.177	0.029	-0.018
		(0.039)	(0.032)	(0.027)	(0.052)	(0.056)	(0.048)
	Composite score squared	-0.056	-0.107	-0.128	-0.085	-0.094	-0.076
		(0.025)	(0.024)	(0.022)	(0.043)	(0.038)	(0.034)
	% of Peers Taking SAT/ACT	0.120	0.174	0.200	0.134	0.175	0.163
		(0.031)	(0.026)	(0.024)	(0.042)	(0.048)	(0.043)
	Constant	-1.196	-0.556	-0.317	-1.918	-1.578	-1.509
		(0.035)	(0.028)	(0.025)	(0.044)	(0.037)	(0.035)
	Observations	10,252	10,273	10,287	10,170	10,175	10,179
	Psuedo-R2	0.101	0.093	0.086	0.021	0.018	0.015

Probit Regression (Weighted).
Robust Standard Errors are in Parentheses Below the Coefficients.
Data from the National Education Longitudinal Study.
* Selectivity Defined by Barron’s Profiles of American Colleges, 21st Edition.

Table 7

Effect of the Policy on the Threshold of the High School Attended for Students with High Motivation to Behave Strategically

Motivation = Likelihood of Being Rejected By a Public College

	Specification					
	(1)	(2)	(3)	(4)	(5)	(6)
Post	0.00312 ***	0.00309 ***	0.00361 ***	0.00330 ***	0.00328 ***	0.00398 ***
	(0.00051)	(0.00051)	(0.00049)	(0.00053)	(0.00053)	(0.00050)
Trend	0.00010	0.00008	-0.00061			
	(0.00017)	(0.00017)	(0.00041)			
Motive	0.01755 ***	0.01780 ***	-0.00301 ***	0.01500 ***	0.01519 ***	-0.01028 ***
	(0.00076)	(0.00076)	(0.00109)	(0.00069)	(0.00069)	(0.00099)
Motive*Post	-0.00327 ***	-0.00322 ***	-0.00314 ***	-0.00403 ***	-0.00403 ***	-0.00319 ***
	(0.00048)	(0.00048)	(0.00047)	(0.00047)	(0.00047)	(0.00046)
Motivation*Trend	-0.00066 ***	-0.00072 ***	-0.00089 ***			
	(0.00016)	(0.00016)	(0.00022)			
N	1,023,314	1,023,314	1,023,314	861,268	861,268	861,268
Adj R-squared	0.6739	0.6742	0.6807	0.0145	0.0156	0.0405
Includes 8th Grade Campus * Ability Quintile Fixed Effec	Yes	Yes	Yes	Yes	Yes	Yes
Includes Campus Fixed Trends	No	No	No	Yes	Yes	Yes
Includes Black, Hispanic, Poor	Yes	Yes	Yes	Yes	Yes	Yes
Includes Sample Selection Correction	No	Yes	No	No	Yes	No
Includes Ability and Ability*Trend (or just Ability for Fixed Trend Specification)	No	No	Yes	No	No	Yes

Note: Thresholds are allowed to change each year.

Significance: *** if Pr<=1%, ** if Pr<=5%, * if Pr<=10%.

Figure 1
Average Student in Top-10% of Own High School

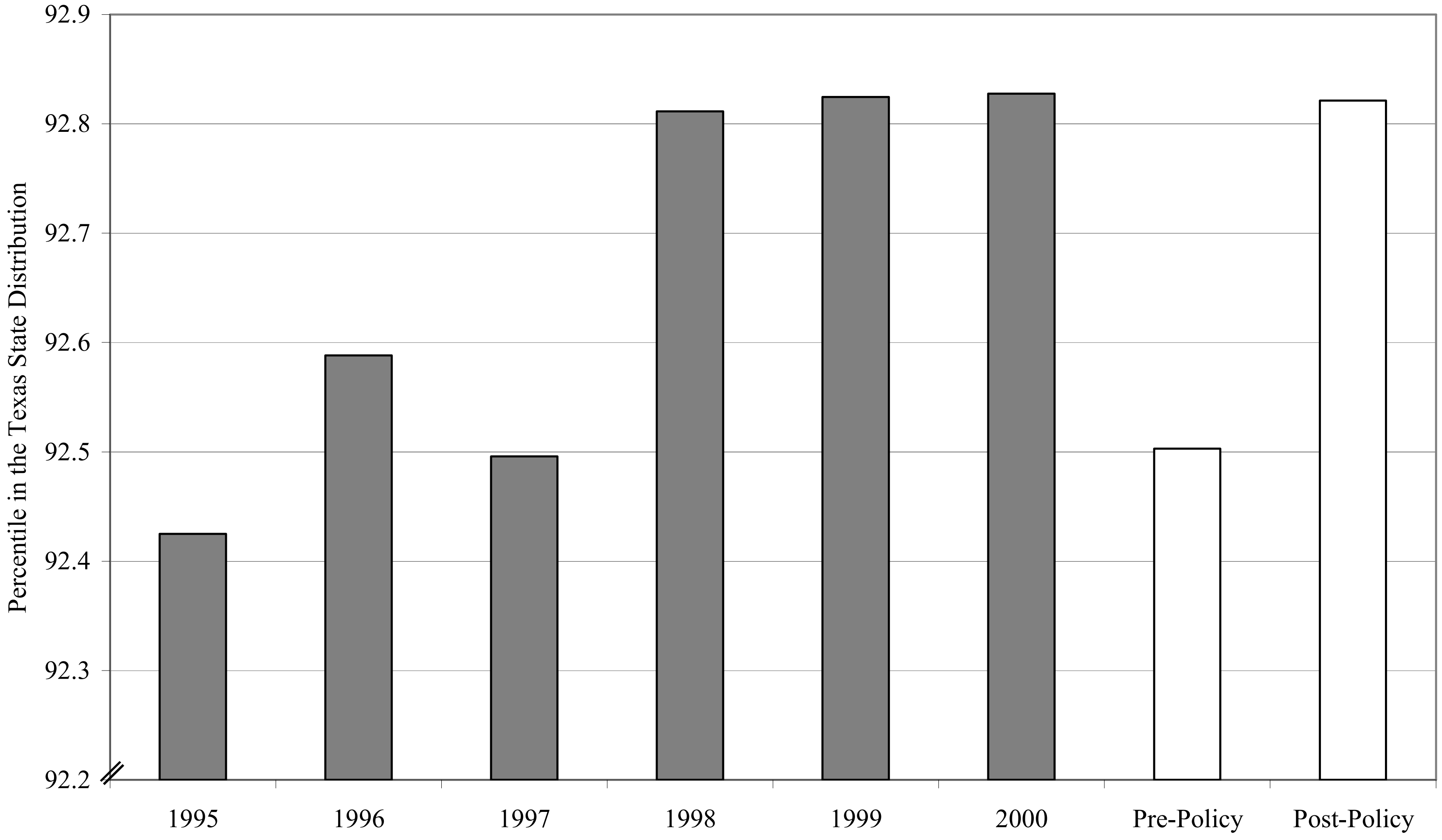

Figure 2
Average Threshold to Get Into Top-10% of Own High School

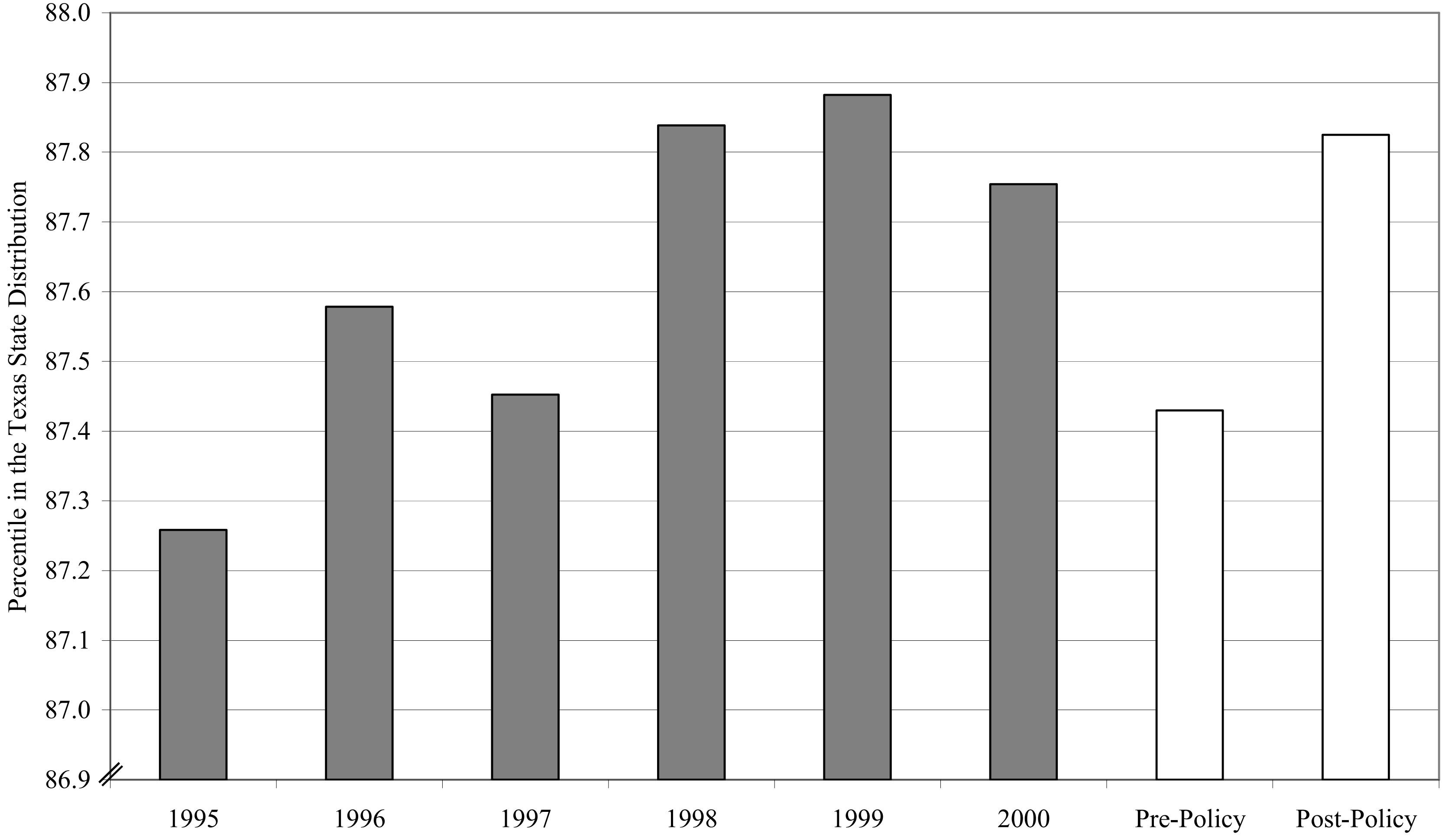

Figure 3

Fraction Who Are in the Top-10% of Own High School Class by Top and Third Decile in Texas State Distribution

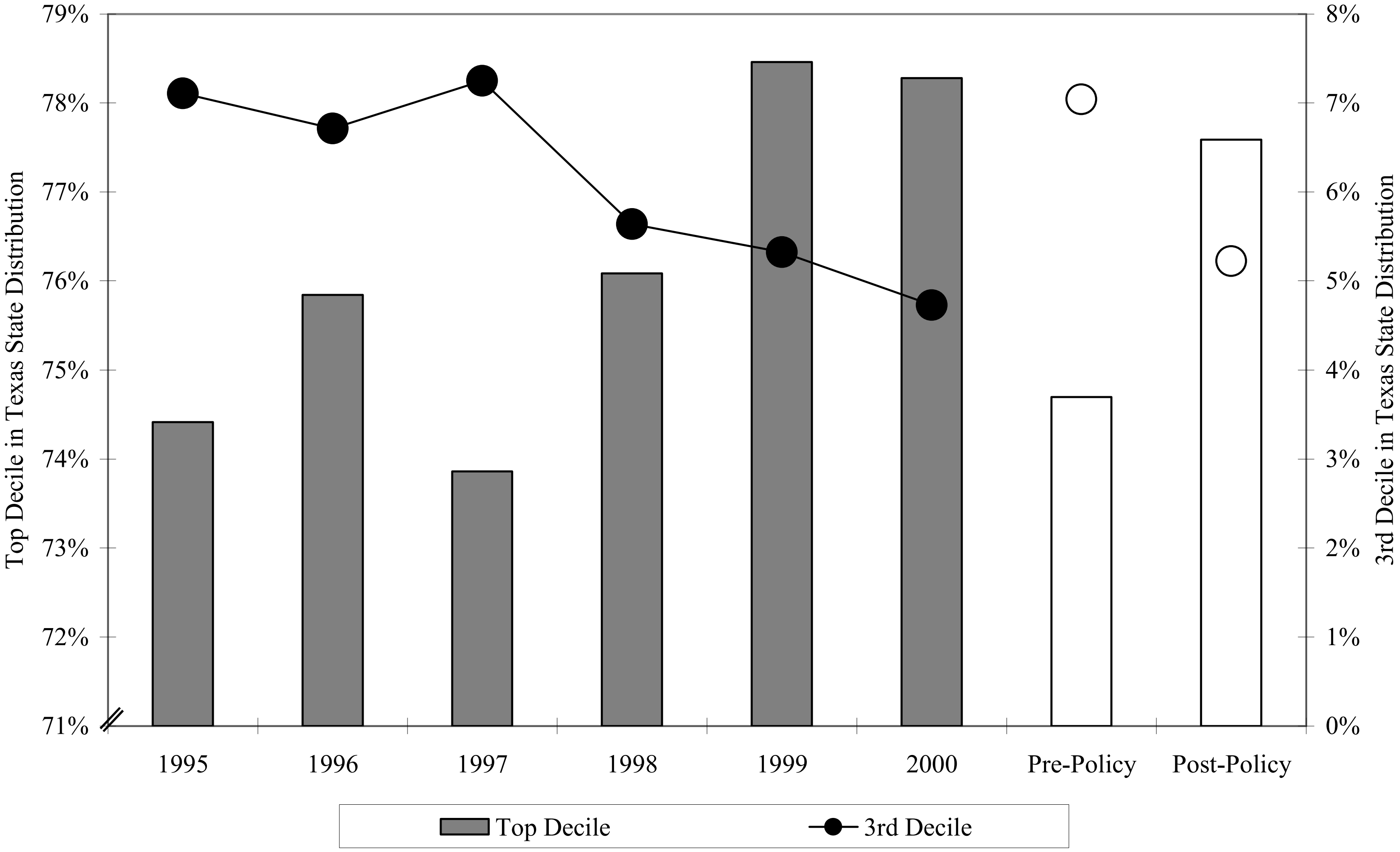

Figure 4
Share of Students in the Top-10% of Own High School Class
1995 to 2000