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IZA DP No. 13988

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Did the Top 10% Plan Increase Access to
Selective Flagship Institutions?**

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ABSTRACT

Uniform Admissions, Unequal Access: Did the Top 10% Plan Increase Access to Selective Flagship Institutions?*

The Top 10% Plan admissions policy has now been in place in Texas for over two decades. We analyze 18 years of post-Top 10% Plan data to look for evidence of increased access to the selective Texas flagship campuses among all Texas high schools. We provide a detailed description of changes in enrollment patterns at the flagship campuses from Texas high schools after the implementation of the Top 10% Plan, focusing on whether the policy resulted in new sending patterns from high schools that did not have a history of sending students to the flagship campuses. Our analysis reveals an increase in the likelihood that high schools in non-suburban areas sent students to the flagship campuses, but ultimately little to no equity-producing effects of the Top 10% Plan over this 18-year period. In fact, the representation of traditional, always-sending, feeder high schools on the flagship campuses continued to dwarf the population of students from other high schools. Thus, the purported high school representation benefits of the policy appear to be overstated and may not go as far as advocates might have hoped in terms of generating equity of access to the flagship campuses in the state.

JEL Classification: I21, I24, J18

Keywords: affirmative action, college admissions policies, racial and ethnic diversity, geographical diversity, top 10% plan, top x% plans, equity and access, college quality

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I. INTRODUCTION

The Top 10% Plan admissions policy has now been in place in Texas for over 20 years. This admissions policy was crafted as a potential “race-neutral” alternative to affirmative action admissions in postsecondary education after race-conscious policies were struck down by the 5th Circuit Court’s decision in *Hopwood v. University of Texas Law School* (1996). The initial Top 10% Plan guaranteed all Texas students’ admission to any four-year public institution of their choice provided they graduate in the top 10% of their senior high school class. This admissions policy sought to exploit the existing racial and ethnic segregation between high schools in the state to increase the racial and ethnic diversity of students admitted to four-year public institutions without explicitly incorporating a student’s race and ethnicity into admissions decisions (e.g., Niu, Tienda, Cortes, 2006; Cortes, 2010; Black, Cortes, and Lincove, 2015; Cortes and Lincove, 2016; Black, Cortes, and Lincove, 2016). However, the best estimates of the short-term effects of the Top 10% Plan suggest that it was only able to recover about one-third of the racial and ethnic diversity that was lost when affirmative action was banned in college admissions (Long, 2007). In the long run, race-based affirmative action bans led to persistent declines in the share of minority students admitted to and enrolling at public flagship universities, regardless of the alternative policies or strategies that states and universities employed to try to recover the racial diversity lost to the bans (Long and Bateman, 2020).¹

Although the Top 10% Plan has had limited success in generating racial and ethnic diversity, scholars have claimed that it instead had the benefit of diversifying the *pool* of high schools (i.e., affluent versus poor schools, urban versus rural schools, etc.) that send students to

¹ The following states were analyzed in the Long and Bateman (2020) study, the year in parenthesis indicates the first year in which affirmative action admissions was banned for the fall student cohort enrollees: Texas (1997), California (1998), Washington (1999), Florida (2000), Georgia (2002), Michigan (2008), Nebraska (2009), Arizona (2011), and New Hampshire (2013).

the selective flagship institutions in the state — the University of Texas at Austin and Texas A&M University in College Station (e.g., Montejano, 2001; Niu and Tienda, 2010). If true, this would suggest that this alternative admissions policy produces benefits distinct from the racial and ethnic diversity goal—that is, broadening access to the four-year public flagship campuses to all high school students not just those from a few privileged high schools. In fact, prior to the Top 10% Plan, a relatively small number of high schools accounted for a substantial portion of student enrollment at the flagship institutions (Tienda et al., 2003).

Access to public flagship institutions is important because of the well-documented monetary returns of attending four-year public colleges (Hoekstra, 2009; Chetty et al., 2017; Smith, Goodman, and Hurwitz, 2020). Indeed, Chetty et al. (2017) note that public colleges and universities are the vehicle of social mobility in the United States. The monetary returns to attendance at a selective state university could be as high as 20 percent (Hoekstra, 2009). Additionally, access to both the Texas flagship universities (UT Austin and Texas A&M), in particular, increased both students' likelihood of graduating with a bachelor's degree and their later earnings (Black, Denning, and Rothstein, 2020). In addition, students who enroll at flagship campuses may benefit from additional financial resources not available to students at non-flagship campuses. For instance, UT Austin's Longhorn Opportunity Scholars (LOS) and Texas A&M's Century Scholars (CS) programs provide high-achieving students from low-income Texan high schools with additional financial assistance and student support (i.e., mentorship and tutoring services) after enrolling at these flagship campuses. Beneficiaries of the LOS program, in particular, were more likely to graduate, and had higher earnings (Andrews, Imberman, and Lovenheim, 2020).²

² Differences in the design of the LOS and CS programs might explain that similar findings were not found for the CS program at Texas A&M University (Andrews, Imberman, and Lovenheim, 2020).

To date, there has been little research on whether the Top 10% Plan increased the diversity of high schools and access of those high schools to the selective flagship campuses in the state. Studies that have tried to address this question have based their analysis solely on just data from a few years after the policy was enacted (Montejano, 2001; Long, Saenz, and Tienda, 2010). Therefore, these studies cannot speak to either the long-term benefits of the Top 10% Plan nor how robust the initial changes in high school sending patterns were in the first place. In order to answer these questions, one must analyze not just the short-run effects of such a policy, but also the long-run effects as well.

Moreover, given the continued legal challenges to race-sensitive admissions policies in higher education, we examine 18 years of post-Top 10% Plan data to look for evidence of *increased access* to the selective flagship campuses by *all high schools* in Texas. Specifically, we describe the changes in the *sending patterns* of high schools to the selective flagship campuses after the enactment of the Top 10% Plan based on the pre-policy sending patterns of high schools to these flagship campuses. Next, we describe the characteristics of high schools based on these pre-policy sending patterns, as well as the characteristics of high schools that were more likely to send students to the flagship campuses after the implementation of the Top 10% Plan. Finally, we describe the extent to which the share of seats at the flagship campuses have shifted in favor of high schools that did not send many (or any) students prior to the implementation of the Top 10% Plan.

We find that the Top 10% Plan appeared to increase the likelihood that high schools from non-suburban areas of Texas sent students to the flagship campuses that had not previously done so. This result suggests an increase in geographic diversity; however, these changes did not amount to regular sending patterns and the population of students from these high schools was dwarfed in

enrollment by the population of students from high schools with patterns of sending students to the flagship campuses that were well-established before the Top 10% Policy began. In addition, we confirm prior results that demonstrated that the Top 10% Plan did not recover racial diversity lost by Texas's ban on affirmative action by showing that changes in the likelihood that high schools sent students to the flagship campuses were only trivially related to the racial composition of a high school. Lastly, our results also suggest the value of the Longhorn and Century programs in recruiting students to the flagship campuses by showing large increases in the likelihood that high schools that were part of these programs sent students to the flagship campuses.

II. TOP 10% PLAN BACKGROUND AND ITS THEORY OF ACTION

The end of race-conscious college admissions in Texas had a consequential impact at the two selective, four-year public institutions in the state, the University of Texas at Austin (UT) and Texas A&M University in College Station (TAMU) (collectively, “flagship campuses”), where the number of minority enrollees as a proportion of the minority student population decreased significantly.³ In the year following the *Hopwood* ruling, the acceptance rate for Hispanic students dropped from 79.9 to 68.3 percent, an 11.6 percentage point decline, at TAMU (Walker and Lavergne, 2001; Tienda et al., 2003; Bucks, 2003). In response to the *Hopwood* decision, Texas pioneered the first *Top X% Plan* for college admissions (Long, 2007). On May 20, 1997, the Texas legislature passed House Bill 588—most commonly known as the Top 10% Plan. This percent plan guarantees automatic admission to any four-year public university of choice to all high school seniors who graduate in the top decile of their graduating class.⁴ At first glance, the Texas percent

³ In fact, the total number of minority students admitted to the flagship campuses went up slightly, but this increase resulted more from the changing demographics of the college-age population in the state (Long, 2007).

⁴ Over time there have been some modest changes of the Top 10% Plan, with the 70 percent cap on automatically-admitted students to UT-Austin and the imposition of a minimum SAT threshold for students who do not qualify for

plan might seem similar to percent plans in other states, but it is unique because it provides students the *choice* of which four-year public institution they would like to attend rather than assigning students to a specific institution.⁵

Since its implementation, the Top 10% Plan has been controversial and has received mixed reviews, yet attempts to revoke or amend the policy stall every time they reach the Texas Senate. Most recently, its constitutionality was challenged under the 14th Amendment in the *Fisher v. University of Texas* (2013, 2016) case. The main criticism of this alternative admissions policy centers on the perception that it is unfair to high-achieving students who attend elite high schools in the state (Cortes and Lincove, 2019). Because the Top 10% Plan is solely based on high school class rank, those students who do not make the top 10% cutoff must go through the regular college admissions evaluation process. However, even after the passage of the Top 10% Plan, the majority of students who attended the selective flagship campuses came from a handful of high schools in the state. For instance, of over 1,600 high schools throughout the state, 28 “feeder” high schools accounted for 23 percent of students that were admitted to UT in 2000, and 35 percent of these students who enrolled (Tienda et al., 2003). The corresponding figures for TAMU are lower but still high — 12 and 22 percent, respectively (Tienda et al., 2003). The late Irma Rangel, the main sponsor of the Top 10% Plan, had argued that public institutions should be accessible to *all* state residents, regardless of their geographic location, ethnic background, or economic status (Giovanola, 2005). Thus, the use of a single-uniformed criterion, such as high school class rank,

automatic admission among the most noteworthy. As the result of Senate Bill 175 enacted in 2009, Texas placed a limit on student choice: UT-Austin is now allowed to cut off the proportion of Top 10% Plan students in a given freshman class at 75 percent.

⁵ In both the California and Florida percent plans, students are accepted into the state university system by rank eligibility but are not given any choice of which institution they are admitted to.

for schools across the state was, in fact, a deliberate action by the Texas legislature to increase not just racial and ethnic diversity on college campuses but also geographic representation.

The potential for the Top 10% Plan to generate this increased geographic representation stems from its theory of action. All race-neutral approaches to generating racial and ethnic diversity of college campuses have specific theories of action for how they will achieve that diversity, and a necessary set of consequences that follow. Traditional race-conscious affirmative action policies are based on the simple theory that if colleges give an admission boost to students from traditionally underrepresented racial and ethnic backgrounds, then the higher rates of admission among these student populations will lead to higher rates of enrollment. In contrast, “race-neutral” alternatives to race-conscious policies rely on more convoluted theories of action to generate racial and ethnic diversity. For example, proposals for socioeconomic affirmative action assume that the relationship between race/ethnicity and socioeconomic status (SES) is sufficient for admissions boosts given to lower-SES students to result in an increase in racial and ethnic diversity among enrolled students at institutions of higher education (Cancian, 1998). Recent work, however, demonstrates the relationship is not, in fact, strong enough for SES-based affirmative action to reproduce the racial and ethnic diversity achieved under race-based affirmative action (Reardon, Baker, Kasman, Klasik, and Townsend, 2018). That said, although it is not sufficient to generate racial and ethnic diversity, selecting students based on their socioeconomic status does lead to more SES diversity (Reardon, et al., 2018).

Like SES-based affirmative action proposals, the Top X% Plan admission policies are based on assumptions about how the policy will generate racial and ethnic diversity in higher education. Specifically, for a Top X% Plan to succeed, there must be enough racial and ethnic segregation between high schools that privileging admissions, based on the high school class rank,

will result in the admission of many traditionally underrepresented students from highly segregated high schools (Niu and Tienda, 2006; Niu, Tienda, Cortes, 2006; Cortes, 2010; Klasik and Dayhoff, 2014). However, few states have high school segregation extreme enough to suggest that Top X% Plans will be successful at generating racial and ethnic diversity (Klasik and Dayhoff, 2014). Indeed, most evidence confirms that the amount of segregation in states that use Top X% Plans is not enough to produce the levels of racial and ethnic diversity achieved under race-based admissions policies, except in Florida where the Top 20% Plan was generous enough that it admitted essentially the same students who would have been admitted prior to the plan (Long, 2007). However, just as privileging socioeconomic status in SES-based admission policies has the benefit of generating socioeconomic diversity, it may be that the equal consideration of high schools in Top X% Plans might lead to a greater representation of students from different high schools. Although race-neutral admissions policies might more-precisely target traditionally underrepresented student groups by using a wider range of selection criteria, Black, Cortes, and Lincove (2015) use simulations to show that imposing additional admissions criteria (i.e., so-called “cut-points”) to the Top 10% Plan admissions policy could lead to a decline in student enrollment at the flagship campuses by students from traditionally underrepresented racial and ethnic groups. In fact, it appears that no weighted combination of race-neutral selection criteria can generate racial and ethnic diversity comparable to race-based policies without sacrificing the academic quality of the admitted student class (Long, 2015).

III. DATA AND DEFINITIONS

A. Data Sources

The unique dataset used in our analysis was assembled from various data sources. First, we obtained from both the flagship campuses, UT and TAMU, 20 years of administrative first year enrollment data from 1996 through 2016.⁶ Specifically, we have two years of pre-policy data (1996 and 1997) and 18 years of post-policy data (1998 through 2016). Each flagship institution provided the name and city of the high schools of enrolled students, the number of students enrolled from those high schools, and more importantly, the high schools' unique 6-digit College Entrance Examination Board (CEEB) identification number along with the Texas Education Agency (TEA) unique identification number for each of these high schools.⁷

Second, we merge the 20 years of flagship enrollment data with publicly available data from the National Center for Education Statistics' Common Core of Data (CCD), which includes information about the location and demographics of each public high school. The CCD is a comprehensive, annual, national database of all public elementary and secondary schools and school districts in the United States. We limited the CCD to the state of Texas and obtained a sample of 3,225 public high schools in the state that had twelfth-grade students from 1995 through 2015. Thus, the high school characteristics from the CCD are time variant across all years and are also lagged by one year prior to us observing high school students enrolling at UT or TAMU in 1996 through 2016. The time variant nature of the CCD will allow us to observe the compositional changes in the student body of high schools enrolling pre- and post-top 10% policy at UT and

⁶ An enrolled student is one who enrolled in classes during the fall semester or enrolled during the summer and re-enrolled in the fall. This is the Integrated Postsecondary Education Data System (IPEDS) definition of entering freshman and this is the definition that both flagship campuses use.

⁷ The CEEB ID is a unique identifier for academic institutions like high schools, colleges, etc., and the TEA ID is the unique state school ID commonly included in state and federal educational databases. Both flagship campuses provided these ID's to create this necessary cross walk for the merging of the other data sources.

TAMU. Most importantly, by merging the flagship data with the CCD allows us to identify not only the subset of high schools sending students to the flagship campuses but also the subset of never-sending high schools—that is, those high schools that did not send any students to the flagship campuses in the 18 years after the Top 10% Plan was enacted. Note that the sample of 3,225 high schools is the total number of all high schools we observe in the state of Texas in the 20 years of our data. However, in any given year, the number of high schools we observe in the flagship database ranges from 1,585 to 2,000. We ultimately focus on just the 1,686 high schools for which we have two years of pre-policy data.

Third, we calculate for each high school their respective distance (in miles) to the nearest four-year public flagship campus, (UT and TAMU), and to the nearest four-year non-flagship institution. Specifically, these distance variables are generated using longitude and latitude to compute the distance between each high school to the nearest four-year flagship and non-flagship campuses, respectively.⁸

Lastly, we merge in data on the average SAT performance for each high school. The mean high school SAT variable was obtained from the College Board and is based on all Texas students who took the SAT in 1996 prior to the enactment of the Top 10% Plan. We use pre-policy SAT data since it is well-established that there was some strategic high school switching among children

⁸ The program used in the computation of the distance variables is called “Distance and Bearing Between Matched Features” (distbyid.avx) by Jenness (2004), which is an application for ArcView. We first generated X/Y coordinates based on longitude and latitude of all of the Texas high schools. Then, using the option X/Y coordinates, we computed a distance matrix of the distance between all high schools and all universities in the data. Finally, the function option in Stata Statistics/Data Analysis called $\min(x_1, x_2, x_3, \dots, x_k)$ was used to generate variables capturing the number of miles to nearest flagship and nearest non-flagship campus from each high school. In the case of missing distance data, we used the average distance for non-missing observations within the same school district or county.

of high-income parents in order to be rank-eligible (Cullen, Long, and Reback, 2013).⁹ Thus, it seems prudent to only use pre-SAT scores of high schools.

B. Definitions: Typology of High Schools

Given that the aim of this study is to analyze whether the Top 10% Plan did, in fact, increase access to the selective flagship campuses in the state, we begin by categorizing high schools based on two years of pre-policy data (1996 and 1997). Because the CCD is considered the census of public K-12 education in the United States, we merge the CCD with the flagship administrative enrollment data to categorize high schools into three mutually exclusive types of schools: (1) *always senders* (i.e., those high schools that sent students to either flagship campus in *both* of the pre-policy years); (2) *occasional senders* (i.e., those high schools that sent students to either flagship campus in *either* of the pre-policy years; or (3) *never senders* (i.e., those high schools that did not send a single student to either flagship campus in *either* of the pre-policy years). The latter high school category, never senders, is of great policy interest because if the Top 10% Plan did, in fact, broaden access to the flagship campuses, one would hope it would be from these high schools. Although the two years prior to the policy may seem like a short amount of time in which to determine these high school sending patterns, Figure 1 demonstrates that subsequent sending patterns largely confirm the patterns seen in these two years. Specifically, Figure 1 presents the sending patterns of the always-, occasional-, and never-sending high schools for the 5, 10, 15, and 18 years (through the end of our data) after the Top 10% Plan went into effect in terms of the number of years that schools sent students to either flagship campus in the given post-policy window. As shown in Figure 1, high schools that were never senders in the pre-policy period

⁹ Cortes and Friedson (2014) use a difference-in-differences framework, and find that, as a consequence of the Top 10% Plan admissions policy, residential property values in the neighborhoods with lower-performing schools (i.e., bottom quintile of school quality) grew more rapidly relative to areas served by higher-performing schools.

generally continued to never send students to the flagship campuses, always-sending high schools sent students nearly every year thereafter to the flagship campuses, and occasional-sending high schools fell in the middle of these extremes.

We are also able to identify *Longhorn* and *Century* high schools—schools that were targeted with special recruitment efforts and scholarships to encourage students to attend the flagship campuses after the Top 10% Plan. These schools were selected for these efforts primarily because of their concentration of low-income students. Specifically, the goal of the Longhorn Opportunity Scholarship (LOS) Program at UT was to offer financial assistance and academic support services (i.e., mentoring, tutoring, etc.) to students from high schools that did not historically place many students at UT.¹⁰ Similarly, the Century Scholars (CS) Program was established in 1999 at TAMU to enroll and retain top students from underrepresented Texas high schools. The Century program provides both scholarship funds and access to a four-year learning community which strives to help students develop during their time at TAMU.¹¹

IV. SAMPLE DESCRIPTIVES

A. High School Characteristics

Table 1 reports the sample characteristics of all public Texan high schools (shown in panel A, column 1), as well as those high schools that had students enroll in either of the flagship campuses (panel B, column 2), and separately by UT or TAMU, respectively (panel C, columns 3 and 4) prior to the implementation of the Top 10% Plan. Our data contains a total of 1,686 unique

¹⁰ In 2003, the LOS program was discontinued and replaced with the Discovery Scholars Program (DSP). DSP has many of the same features as the LOS program, but DSP eligibility is individual-based rather than high-school-based (Andrews, Ranchhod, and Sathy, 2010; Andrews, Imberman, and Lovenheim, 2020).

¹¹ The CS program provides a one-time \$1000 scholarship to be used for a Texas A&M approved study abroad experience and \$5,000 per year for 4 years, however, students must maintain a 2.75 overall grade point average.

public high schools in Texas in this two-year period (1996 and 1997). Strikingly, only 922 of these high schools, or 55 percent of the share of all high schools, had sent at least one student to either of the flagship campuses. But only 648 high schools (38 percent) had sent at least one of their graduates to UT, and 873 high schools (52 percent) had sent at least one of their graduates to TAMU. Although these percentages might make it appear that TAMU is “more accessible” to students in Texas, it is worth emphasizing that our threshold of accessibility to either flagship is quite low—that is, our definition only requires high schools to send *at least one* of their graduates to count as a sending high school. Emphasizing this point, we observe that high schools that sent students to the flagship campuses sent, on average, 6.61 students to either of the flagship campus, or roughly 2 percent of seniors enrolled at UT and over 3 percent of seniors enrolled at TAMU prior to the passing of the Top 10% Plan.

In terms of other high school demographics, the average student body of a high school that sent students to either flagship campus (shown in panel B) had 42 percent non-white students, though the schools that sent students to UT are slightly more diverse than the schools that sent students to TAMU (45 percent versus 41 percent non-white, respectively (shown in panel C)), and slightly less diverse than 45 percent non-white student population at all Texas high schools during this period (panel A). Also, the high schools that sent students to the flagship campuses were relatively high-achieving, on average, with only 18 percent of these schools falling in the bottom quarter of the state in terms of average SAT scores among those students who took the SATs. In fact, the high schools that sent students to the flagship campuses appeared to have a strong college-going culture: all but 4 percent of them had enough students to take the SAT to warrant reporting average school test scores. In contrast, 31 percent of all public Texas high schools in this period

did not have enough students take the SAT to allow for the publication of average school test scores in those high schools.

In terms of geographic location, the majority of high schools sending students to the flagship campuses are in non-rural areas. That is, 37 percent of high schools that had students enroll at either flagship campus were located in rural areas. Although a greater proportion of the schools sending students to TAMU are rural than the schools sending students to UT (35 percent versus 23 percent, respectively), these high schools are all less rural than the group of all Texas high schools (41 percent rural schools). These descriptive statistics highlight that, prior to the passing of the Top 10% Plan, the high schools that sent students to the flagship campuses did not necessarily represent all Texan high schools in terms of either demographic or geographic characteristics.

Next, we present the pre-policy high school characteristics according to three high school sending patterns. As described previously, we categorize all public Texas high schools into three mutually exclusive groups based on their pre-policy high school sending patterns in the two years leading up to the Top 10% Plan implementation as *always senders*, *occasional senders*, and *never senders*. As shown in Table 2, 673 high schools were counted as always-sending schools; 249 schools were occasional-sending schools; and 764 were never-sending-schools. Put differently, the 764 never-sending high schools represent 45 percent of Texan schools that had *not* enrolled a single student to either flagship campus in the two-years prior to the policy. Strikingly, the percent of high schools that had did not send students to UT over this two-year period was much higher than to TAMU (62 percent versus 48 percent, respectively).¹²

¹² Not reported in Table 2. The descriptive statistics reported in Table 2 are shown separately for each flagship campus in Table A1. Specifically, Table A1 reports 1,038 high schools were counted as never-sending schools at UT ($1,038/1,686 = 62$ percent), and 813 high schools were counted as never-sending schools at TAMU ($813/1,686 = 48$ percent).

In general, the high school sending patterns to either flagship campus, always-sending schools have the fewest free lunch eligible students (26 percent), the largest grade-12 enrollment (mean 230 students), the highest average SAT scores (26 percent in 1st quartile), and are also the closest to both UT and TAMU campuses (152 miles to the nearest flagship campus, on average). Always-sending schools send over 2 percent of their seniors to UT and over 3 percent to TAMU. In stark contrast, never-sending schools have the highest percentage of free lunch eligible students (34 percent), the smallest grade 12 enrollment (average 26 students), the lowest SAT scores (7 percent in 1st quartile), and are the farthest from each of the flagship campuses (209 miles from the nearest flagship campus, on average). Occasional-sending schools often fell between these extremes. However, these schools were the most extreme of the three groups in terms of having the highest average percentage of white students (61 percent), and the greatest proportion in rural areas (70 percent). The same general findings hold for the sending patterns based on students enrolling separately at UT or TAMU.¹³

B. Locality of the Never-Sending High Schools

Recall that there are 764 never-sending high schools, which represent 45 percent of all public high schools in the state that had not enrolled a single student in either flagship campus in the two-years prior to the Top 10% Plan policy. To see whether there were increased access in geographic patterns to the flagship campuses for students from these high schools after the passing of the Top 10% Plan, we present a series of maps (shown in Figures 2-5) that visually illustrate the location of these never-sending high schools, and importantly, how their sending patterns changed after the Top 10% Plan was enacted. Specifically, in each of these maps, the colored

¹³ Table A1 in the appendix provides the same summary statistics by always senders, occasional senders, and never senders separately for UT and TAMU.

circles indicate the location of the pre-policy never-sending high schools and the counties are shaded according to the percent of that county whose race or ethnicity is non-white (i.e., Black and Hispanic population). The green circles indicate that these previously never-sending high schools sent students to the flagship campuses in the years after the policy that we observe (i.e., they become always-sending high schools). The yellow circles indicate previously never-sending high schools that became occasional-sending high schools in the post-policy period. Lastly, the red circles indicate previously never-sending high schools that continued not to send a single student to either flagship campus in the post-policy period.¹⁴

Figure 2 shows the sending pattern of these previously-never-sending high schools after the full post-policy period we observe. Here, we see that most these never-sending high schools continued not to send students to either flagship campus and that very few of these schools become always-sending schools.¹⁵ In fact, almost all the never-sending schools that became always-sending schools were clustered in areas around large cities—particularly around the Dallas and Houston areas. Moreover, there does not appear to be a pattern between the racial and ethnic composition of a county nor whether never-sending high schools started sending students to the flagship campuses after the Top 10% Plan started in the 18-years of post-policy data (1998-2016).

Next, Figure 3 presents a version of the map shown in Figure 2 that includes progressively more years of post-policy data to demonstrate how the sending patterns of the never-sending high schools changed over time. Specifically, we look at a five-year window (panel A: 1998 through 2002); 10-year window (panel B: 1998 through 2007); 15-year window (panel C: 1998 through 2012); and lastly, the full 18 years (panel D: 1998 through 2016). Here the color of the circles

¹⁴ Percent non-white is based on the 2000 Census count of high-school-aged individuals, 15-19 years old.

¹⁵ Similar high school patterns are observed if Figure 2 is done separately for each flagship campus. See appendix for Figure A1 for UT Austin and Figure A2 for Texas A&M University, respectively.

shifts along the green-yellow-red gradient according to the proportion of years represented in the map that high schools had a student enroll in either flagship campus (“no years” is red and “all years” is green). It is quite clear from Figure 3, that the first five years of the Top 10% Plan was less than successful in attracting new high schools to both the flagship campuses—most high schools remain red. In fact, it is not until 10 years into the policy (panel B) that we observe some of the never-sending high schools turning from red to shades of orange, indicating occasional sending. In contrast, few of the high schools that adopted regular sending patterns in the early years maintain those sending patterns, turning from green to shades of yellow. That said, Figure 3 is quite telling, in any given panel, most schools are red, and those that do appear to occasionally send students stay in the red-orange end of the spectrum, indicating that there were very few years in which they sent students to the flagship campuses.

Because students tend to prefer to attend college close to home (e.g., Skinner, 2019, Black, Cortes, and Lincove, 2020), it seems reasonable that high schools that are close to either UT or TAMU might be more likely to send students more frequently once the Top 10% Plan started. If this were true, it might be apparent in Figure 4, which illustrates the sending pattern of never-sending high schools in the period after the policy began and focuses in particular on high schools within a 50-mile radius of each flagship campus. However, Figure 4 does not appear to illustrate such a relationship between a high school’s proximity to either campus and its post-enactment school sending patterns to the flagship campuses.

Finally, Figure 5 presents four maps of the sample of never-sending high schools according to their urban classification: urban (panel A), suburban (panel B), town (panel C), and rural (panel D). In general, we observe that the small handful of high schools that became always senders were

mainly in urban locations and that many rural high schools sent students to the flagship campuses, but not on such a regular basis as to become an always-sending high school.

In summary, these maps indicate that the Top 10% Plan was not very successful in making the flagship campuses more accessible to all Texan high schools. It appears that most high schools without a prior pattern of sending students to the flagship campuses maintained that pattern or only broke it briefly. However, it is also clear that a minority of high schools did change their sending patterns. In the sections that follow, we analyze more thoroughly how these high school sending patterns and the characteristics of sending high schools changed after Texas enacted the Top 10% Plan.

C. Changes in Share of Students from Feeder Schools on Flagship Campuses

Another way to consider the potential *equity-producing* effects of the Top 10% Plan is to consider how much of the representation of students on the flagship campuses shifted to include more students from the occasional- and never-sending high schools after the implementation of the policy. If there were a shift away from the always-sending high schools to the other schools that resulted from the Top 10% Plan, it should be represented in the share of students from the non-feeder high schools on the flagship campuses. The percentages of students from the three categories of sending high schools (i.e., always senders, occasional senders, never senders) enrolled at the flagship campuses are shown in panel A of Figure 6. Although there was a dip in the relative proportion of students from always-sending high schools, students from these schools continued to comprise over 90 percent of the students from Texas public high schools at the flagship campuses, and only a slight increase is seen for the occasional- and never-sending schools after the implementation of the Top 10% policy.

In panel B of Figure 6, we calculate a Herfindahl-Hirschman (H-H) Index for each year (1998 through 2016). Specifically, the H-H Index calculation takes the form,

$$HHI_t = \sum_j s_{jt}^2 = \sum_j \left(\frac{\text{total number of students in each high school type } j_t}{\text{total number of student in each year}_t} \right)^2$$

where s_{jt} is the “market” share of each high school type j (always senders, occasional senders, and never senders) in year t . Here, the market share is the number of students at each high school type j enrolled at a flagship campus divided by the total number of students from all high school types enrolled at a flagship campus in year t . Thus, the H-H Index is one approach to describe the relative share of students at the flagship campuses based on the pre-policy sending patterns of three high school types. The H-H Index gives an assessment of the extent to which certain high schools may dominate sending students to the flagship campuses, that is, whether these high schools have a “monopoly” on the seats taken by students from Texas public high schools. The closer to 1 the H-H Index is, the more the always-sending high schools are considered to have a “monopoly” on enrollments at the flagship campuses.

We see that the H-H Index dropped from roughly 0.95 before the Top 10% Plan to a nearly-constant 0.85 in the post-policy years. Values in this range indicate that the always-sending high schools have a *near-monopoly* on admission to the flagship campuses relative to the never- and occasional-sending high schools. This trend is the same if we consider high school sending patterns to either of the flagship campuses individually, UT and TAMU, except the index is slightly higher at UT and slightly lower at TAMU. These patterns provide important context for the regression analyses that follow because they illustrate the practical insignificance of the changes in sending patterns of the occasional- and never-sending high schools after the Top 10% Plan went into effect.

V. EMPIRICAL STRATEGY AND MODEL SPECIFICATIONS

A. Baseline Regression Specification

To analyze whether the Top 10% Plan increased access for students from all Texas public high schools to the selective four-year public flagship campuses in the state, we analyze whether there was an increase in enrollment to the flagship campuses from high schools according to our typology of sending patterns. We estimate several regression models of the following functional form by ordinary least squares with a focus on the parameters δ_1 and δ_2 ,

$$Y_{st} = \alpha + \beta \cdot Post_t + \gamma_1 \cdot Never_s + \gamma_2 \cdot Occasional_s + \delta_1 \cdot Post_t \cdot Never_s + \delta_2 \cdot Post_t \cdot Occasional_s + X_{st} \cdot \theta + \varepsilon_{st}$$

where Y_{st} is an indicator variable that is equal to one if high school s sent a student to either flagship campus (UT and/or TAMU) in year t (or the percentage of the total seniors enrolled at high school s in year t that enrolled in either campus) or equal to zero otherwise, $Post_t$ indicates that the observations are from the post-policy years, $Never_s$ is a dummy variable that indicates if the school is never-sending high school, $Occasional_s$ is a dummy variable that indicates if the school is an occasional-sending high school, and the omitted comparison category is the always-sending high school. X_{st} is a vector of both time-varying and time-invariant high school characteristics. The time-varying high school characteristics include the composition of the student body (i.e., percent Hispanic, black, and Asian, and free lunch eligible) and the total number of students enrolled in grade 12. The time-invariant high school characteristics include: distance to the nearest flagship campus (100 miles), distance to the nearest other (non-flagship) four-year public institution (100 miles), and/or distance to either UT or TAMU (100 miles), urban locale classification (i.e., urban, suburban, town, and rural), whether the school was ever designated as a

Longhorn or Century high school, and lastly, the quartile of the mean SAT score for test-takers among Texas high schools in 1996.

Additionally, to account for a statewide shift in demographics, we include a control for the average percentage of non-white students in high schools across the state in all model specifications reported in this paper. Standard errors are clustered at the high school level in all model specifications. Lastly, for ease of interpretation, we report all regression results as linear probability models, but also confirm our results with a probit regression analysis. Our conclusions are the same regardless of the functional form being implemented.

B. Who Attends the Flagships? Changes in Characteristics of Sending High Schools

Next, we analyze the characteristics of high schools that sent students to either flagship campus before and after the enactment of the policy. Table 2 shows descriptive differences in school characteristics between always- and never-sending high schools. For this next analysis, we aim to see whether the characteristics of high schools who are sending students to the flagship campuses look different after the implementation of the Top 10% Plan. We do this by estimating models that interact the variable $Post_t$ with each of the high school characteristics, X_{st} .

For simplicity, we do not include all interactions in any single regression model, but rather analyze them in sets of variables, as changes in school demography, targeted recruitment efforts, SAT performance, and location. For example, one interaction model includes interactions with school demographic characteristics (percent Black, Hispanic, and Asian; percent free lunch eligible; and the number of twelfth-grade students) along with the controls for all other variables. Another model includes just interactions for the location variables (distance to the nearest flagship campus, distance to the nearest other four-year (non-flagship) campus, and urban locale

classification), and so on. These models take the following functional form and are estimated by ordinary least squares with a particular focus on the parameter δ ,

$$Y_{st} = \alpha + \beta \cdot Post_t + X_{st} \cdot \theta + Post_t \cdot X_{st} \cdot \delta + \varepsilon_{st}.$$

C. School-Threshold Analysis: Becoming an Always-Sending High School?

The preceding analysis measures access to the flagship campuses by whether a high school enrolled at least one student at a flagship campus. However, as Long, Saenz, and Tienda (2010) note, this standard represents “a weak criterion for measuring a high school’s ‘access’ to the flagships” (p. 84). Many scholars have noted that beyond always sending students to the flagships, true “feeder” high schools send a *high proportion* of their graduates to the flagship campuses (e.g., Long et al., 2010, Tienda and Niu, 2006; Saenz, 2007). Thus, we also conduct a *school-threshold* analysis in which we re-estimate all regression models, but instead of analyzing whether a high school sent *any* students to a flagship campus, we instead consider whether high schools without a prior pattern of sending students to the flagship campuses start to look more like always-sending high schools in terms of the percentage of their twelfth-grade students that enroll in a flagship campus. We accomplish this by first looking at what percentage of students the always-sending schools send to the flagship campuses in the period after the Top 10% Plan went into effect, and identify the 10th, 25th, and 50th percentile of these sending rates within these schools.¹⁶ We create three new outcome variables that indicate whether any of the schools in our sample exceed these thresholds in any year of our data. This analysis allows us to demonstrate whether particular high school characteristics were associated with changes in the likelihood a school sent students to the

¹⁶ The underlying assumption here is that pre- and post-policy sending patterns of always-sending school to the flagship campuses do not change over time.

flagship campuses at rates similar to the thresholds set by the always-sending high schools in the same time period.

D. Heterogeneity Analysis by Flagship Campus

Lastly, in all of our analyses, we pool together the sending patterns of high schools regardless of whether they sent students to UT, TAMU, or both. We elaborate on these results by also considering the sending patterns of high schools to UT and TAMU separately, acknowledging that each flagship campus has faced a different policy trajectory since the Top 10% Plan went into effect. For example, UT has been allowed to reduce the top 10% threshold in order to reduce the overabundance of students admitted to UT under the Top 10% Plan. As shown below our results do, in fact, differ depending on the analysis being performed.

VI. RESULTS

A. Overall Regression Results

Recall that Figure 1 showed the number of years high schools in each of the three pre-policy sending categories that sent students to the flagship campuses in each of the five-year window increments after the enactment of the Top 10% Plan. Regardless of the time increment, we observe that never-sending high schools continued to be non-sending schools, while always-sending schools continued to send students to the flagship campuses almost every year.

We elaborate the graphical results from Figure 1 in Table 3, which, in panel A, gives the regression results predicting the schools that send students to the flagship campuses among all high schools, both in the first five years after the Top 10% Plan was enacted, and the full 18 years post-policy; panel B shows the regression results predicting the change in the percentage of a high

school's senior class attending either flagship; and lastly, panels C and D provide the same results for sending students to UT or TAMU, respectively.

Similar to the story told by Figure 1, we do not find strong evidence that the implementation of the Top 10% plan resulted in new patterns of high schools sending students to the flagship campuses. In the first five years after the Top 10% Plan was enacted (panel A of Table 3), previously never-sending schools were roughly 10 percentage points more likely to send students to either flagship campus. Similarly, occasionally sending schools were just under 9 percentage points more likely to send students to a flagship campus after the policy.¹⁷ These probabilities increased to roughly 15 and 10 percentage points for never- and occasional-sending high schools after the policy enactment. To examine in detail how the probability of never- and occasional-sending high schools changed after implementation of the Top 10% Plan, we added year fixed effects and interactions between those year fixed effects and our occasional- and never-sending indicators to our model. These results are graphed in Figure 7, which depicts the change in the probability that occasional- and never-sending high schools send a student to either flagship campus relative to 1997, the last pre-policy year. Although it appears that occasional-sending schools saw increases in the likelihood they sent students to the flagships, peaking near 20 percentage points five years after the policy began, never-sending schools had a slow increase in their sending probability, starting around 10 percentage points and increasing gradually to about 20 percentage points over the next 18 years.

A hopeful explanation of the relatively small change in sending patterns by occasional- and never-sending high schools is that the few high schools that did adjust their sending did so by

¹⁷ Calculated as the sums of the coefficients of the *Post* indicator variable and the coefficients of the *Post x Never* or *Post x Occasional* interactions. Note that, by construction, never-sending high schools did not send any students to the flagship campuses in the pre-policy period, and occasional senders sent students exactly half the time, making it likely that any pattern of sending students in the post-enactment period would be statistically significant.

sending many more than one student to the flagship campuses than before. However, this does not appear to be the case. Expressed in terms of the percentage of a high school's senior class, never-sending schools sent roughly 0.60 percent of their seniors to a flagship campus in the first five years after the policy went into effect (panel B), and roughly 0.90 percent of their seniors over the longer eighteen-year term after the policy. Recall from Table 2 that never-sending schools are small to begin with, averaging just 26 twelfth-grade students. Thus, this change in sending patterns among the 764 never-sending schools amounts to approximately 117 students in each of the first five years after the start of the policy.¹⁸ The change in the percentage of the senior class for occasional-sending was smaller—0.30 percent in the short term, and 0.40 percent in the long term. However, occasional-sending schools are larger than never-sending schools, averaging approximately 65 twelfth-grade students.

Pre-policy sending patterns vary slightly between UT and TAMU (panels C and D of Table 3). We observe the same general pattern that never-sending schools increased their likelihood of sending students to UT by almost 8 percentage points and to TAMU by roughly 11 percentage points in the first five years of the policy. Following the overall pattern seen in panel A, this likelihood increases in the longer-term. However, almost all of the change in sending behavior among occasional-sending schools is concentrated in sending students to TAMU. After the Top 10% Plan began, occasional sending schools were slightly less likely to send students to UT, but 5 to 6 percentage points more likely to send students to TAMU.

¹⁸ For comparison, UT and TAMU together enroll over 19,000 first-year students each year.

B. Changes in Sending Patterns by High School Characteristics

Thus far, our analysis has shown that the enactment of the Top 10% Plan was associated with only modest changes to patterns of high schools sending students to the Texas flagship campuses. However, given that the goal of the Top 10% Plan was, in part, to serve as a way to generate racial and ethnic diversity on the flagship campuses and perhaps increase geographic diversity as well, these modest changes may be welcome if they occurred among high schools that might serve those goals. The interaction analyses presented in Tables 4A-4D attempt to answer whether changes in sending patterns after the Top 10% Plan was enacted—regardless of prior sending patterns—came from schools that might reflect the goals of the policy. As with Table 3, we show these results for sending to either flagship campus, or UT or TAMU individually, and these results are presented both for the initial five years after the plan was implemented, and for the entire 18 post-policy plan years of our data.

With respect to school demographics (Table 4A), in general, high schools with a higher proportion of Black students, as well as larger schools, appeared more likely to send students to either flagship campus after the Top 10% Plan started. Specifically, for every percentage point increase in a school's proportion of Black students, the likelihood that a school sends a student to a flagship campus increased by 0.10 percentage points. However, it appears that the relationship with percent of Black students is driven primarily by schools sending students to UT. In contrast, students with a higher proportion of free-lunch eligible students were less likely to send students to the flagship campuses after the plan.

Indicating the success of targeted recruitment efforts, Table 4B shows that Longhorn and Century high schools—schools that were targeted for special recruitment by UT and TAMU, respectively, based on their concentration of low-income students—were more likely to send

students to the flagship that had targeted them. The Longhorn or Century designation increased the likelihood a high school sent a student to the flagship that recruited their students by 6 to 16 percentage points—among the largest relationships we observe thus far.

Table 4C shows how the academic quality of high schools (as measured by mean SAT score of SAT takers from those high schools) that sent students to the flagship campuses changed after the Top 10% Plan began. In fact, high schools in the bottom two quartiles of the average SAT scores were more likely to send students to the flagship campuses after the Top 10 % Plan, relative to schools in the first (highest) quartile. The increase in the likelihood of sending students to a flagship was largest for schools in the bottom quartile. This change may result in part from the fact that all of the Longhorn schools, prior to the Top 10% Plan, averaged SAT scores in these bottom two quartiles.

There were also geographic differences in the characteristics of high schools that were more likely to send students to the flagships after the Top 10% Plan (Table 4D). Over the full timeframe of our data, for every 100 miles high schools are from the flagship public institutions, they were 1.3 percentage points less likely to send students to either flagship campus. In other words, students from high schools closer to non-flagship public institutions were more likely to attend the flagship campuses after the policy. This pattern is clearer when looking at sending patterns to UT and TAMU individually. Here, for every 100 miles high schools were from UT and TAMU, they were roughly 1 to 2 percentage points less likely to send students to each respective campus. The location of universities in larger cities may explain the roughly 7 percentage point increase in the likelihood that students from high schools in cities that were more likely to send students to the flagship campuses after the policy relative to students who lived in suburbs.

However, students from high schools in rural areas were also more likely to attend the flagship campuses, relative to suburban students, after the policy went into effect.

To be clear, the point estimates shown in Tables 4A-4D are nearly all relatively small in magnitude. For example, a hypothetical high school with a 100 percent Black student body would be 10 percentage points more likely to have students enroll at a flagship campus after the policy than a high school with no Black students. This difference is still 6 percentage points less than the relationship between a Longhorn designation and post-policy sending patterns. Our largest point estimate—the 18.3 percent increase in the likelihood of sending students to UT for schools with 4th quartile SAT scores—suggests that not a single school characteristic was associated with an increase in the likelihood of sending a student to either flagship in the post-policy years any more than at least one student every 5 years.

C. School-Threshold Analysis

Although the preceding analyses indicate that few high schools met the low bar of sending at least one student to the flagship campuses each year, it is possible that high schools established patterns of sending higher proportions of their twelfth-grade students that matched at least some of the always-sending schools after the enactment of the Top 10% Plan. For this reason, we analyze changes in the characteristics of high schools that surpassed thresholds set by the always-sending schools on this measure. Specifically, we analyze three distinct thresholds: the 10th, 25th, and 50th percentiles. Always-sending high schools send an average of 1.6 percent, 2.4 percent, and 3.8 percent of their twelfth-grade students to a flagship campus at these respective thresholds. To put these numbers in perspective, schools at the 90th percentile sent an average of 8.9 percent of their students, and the top sending school averaged sending 23.1 percent of its twelfth-grade students to either flagship campus.

We use the same interaction approach as in the analysis shown in Tables 4A-4D to look at whether the characteristics of the schools that meet these thresholds changed after the Top 10% Plan was enacted. These results are reported in Tables 5A-5D, again we begin by first analyzing the first five-years after the implementation of the Top 10% Plan, and then the full 18-years for which we have data.

As with the results reported in Table 4A, most of the statistically significant relationships related to the racial composition of high schools are quite small in magnitude. Based on associations with student demographics, few schools were likely to exceed even the 10th percentile of sending rates of always-sending schools in the post-policy period (Table 5A). In the longer-term analysis, there is some evidence that schools with higher Black student populations were more likely to meet the sending rate of 10th and 25th percentile schools. Here we see, for example, an additional percentage point in the percent Black student population associated with a 0.10 percentage point increase in meeting these thresholds. However, high schools with more free-lunch eligible students were *less* likely to meet the thresholds in the long-term analysis.

Although high school demographics are not particularly predictive of changes in whether schools meet the sending rates of always-sending schools, the targeted recruitment efforts of the Longhorn and Century programs do appear linked to changes in sending rates. In the first five years after the policy, the Longhorn and Century schools were 12 and 7 percentage points more likely to send a greater proportion of their senior class than the 10th percentile of pre-policy always-sending schools (Table 5B). In the longer-term, this likelihood increased, and in addition, Longhorn schools were roughly 7 percentage points more likely to send a greater proportion of students than the 50th percentile of always-sending schools.

In terms of changes in the “quality” of school performance, similar to what we observe in Table 4C, high schools with lower average SAT scores—in the 3rd and 4th quartile—were more likely to meet the always-sending thresholds than they were before the policy (Table 5C). In the first five years after the policy, high schools in the 3rd and 4th quartiles were: 7 and 11 percentage points more likely to send a greater proportion of their senior class than the 10th percentile of pre-policy always-sending schools; 9 and 10 percentage points more likely to send a greater proportion of their senior class than the 25th percentile of pre-policy always-sending schools; and 6 and 5 percentage points more likely to send a greater proportion of their senior class than the 50th percentile of pre-policy always-sending schools (Table 5C). In the longer-term, this likelihood increased further for the bottom quartile of high schools: They were 15 percentage points more likely to meet the 10th-percentile threshold, 14 percentage points more likely to meet the 25th-percentile threshold, and 9 percentage points more likely to meet the 50th-percentile threshold.

With respect to geography, the distance of a high school to one of the flagship campuses was related to whether that high school exceeds the always-sending school thresholds (Table 5D). For example, in both the short- and long-term analyses, high schools that were close to either flagship campus were substantially more likely to exceed the 10th, 25th, and 50th percentile threshold.

There is also a strong differential relationship between a high school’s urban locale and its likelihood of exceeding the always-sending school thresholds in the post-policy period (Table 5D). In both the short- and longer-term analysis, we find that, town and rural high schools were more likely to exceed any of the three thresholds we examined by anywhere from 6 to 10 percentage points after the policy went into effect. Urban high schools were also more likely to exceed all three thresholds, but only in the longer-term analysis.

VII. CONCLUSION

Given the longevity of the Top 10% Plan and the continued appeal of top X%-based admission policies in the face of continued legal threats to race-conscious affirmative action policies, we set out to study the longer-term trends in college enrollment in Texas after the Top 10% Plan went into place. Previous work found that the Top 10% Plan was not successful at recovering the racial diversity lost after race-conscious affirmative was banned in Texas (e.g., Long, 2007); thus, we focus on outcomes that were more likely given the Top 10% Plan's openness to students from all high school students—the representation of students from different high schools on the selective flagship campuses.

Our analysis reveals a complicated pattern of results that suggest several main findings. First, as previous research has implied, there is not much evidence that the Top 10% Plan resulted in meaningful changes in sending patterns from high schools according to their racial and ethnic composition—at least not in a way that would be related to an increase in the representation of Black or Hispanic students on the flagship campuses. Second, there is strong evidence for the importance of the Longhorn and Century programs for creating new patterns of college-going to the flagship campuses, though we cannot speak to whether this resulted from the programs themselves or that the programs selected particularly promising schools to participate. Finally, sending patterns did change according to schools' geographic setting after the Top 10% Plan went into effect. Urban, town, and rural high schools all made gains on suburban high schools in terms of their likelihood of sending students to either flagship campus, and the flagship campuses appeared to draw students from a shorter distance away.

Our results offer a clear picture of educational haves and have-nots. Though many hypothesized that a potential benefit of Texas's Top 10% Plan would be that, even in the absence

of promoting racial diversity, it might make the flagship campuses more accessible to all students from different high schools, our results demonstrate that two decades on, this is not the case. While it is certainly true that individual high schools sent students to the flagships for the first time after the percent plan began, and that these high schools were in geographically diverse locations, these results were ephemeral. Among the set of schools that had not sent students to the flagship campuses in the two years prior to the Top 10% Plan, virtually none of them established a regular pattern of sending students to the flagship campuses after. Additionally, the schools that were new senders had fewer students who qualified for free and reduced-price lunch than other schools without a history of sending students to the flagship campuses—resulting in a shrinking pool of never-sending schools representing an increasingly disproportionate share of the state’s lower-income population.

In fact, the representation of traditional, always-sending, feeder high schools on the flagship campuses continued to dwarf the population of students from other high schools. Thus, on balance, our analyses reveal that the purported high-school-representation benefits of the percent plan in Texas appear to be overstated and may not go as far as advocates might have hoped in terms of generating access to the flagship campuses for all high schools in the state. These findings appear at odds with other research that has suggested that the Top 10% Plan did increase access to the flagship campuses (e.g., Montejano, 2001; Long, Saenz, and Tienda, 2010; Black, Denning, and Rothstein, 2020). We attribute this difference, in part, to the longer panel of data we have to analyze and our focus on the development of new sending patterns rather than changes in sending among high schools with low, but regular sending rates (as in Montejano, 2001). We also explicitly account for Longhorn and Century high schools and focus only on high schools for which we observe sending patterns in the two years prior to the start of the Top 10% Plan, which

may help explain the places where our results diverge from those of Long, Saenz, and Tienda (2010). Finally, although Black, Denning, and Rothstein (2020) identify a high number of students who gained eligibility for admission to the Texas flagships as a result of the Top 10% plan, their analyses estimate only about 200 students each year converted that eligibility to enrollment, which is not out of step with our own findings.

Our findings are relevant to ongoing debates about the value of race-conscious admission and the potential benefits of its race-neutral alternatives. They illustrate that not only are these policies hamstrung in their ability to generate racial and ethnic diversity, they are also limited in their ability to generate access to new high schools. Given the continued legal requirements to justify affirmative action policies based on the lack of available alternatives with which to secure the state's legitimate interest in diverse student bodies at postsecondary institutions, descriptive accounts of the effects of alternative policies, like Texas' Top 10% Plan remain an important area of research.

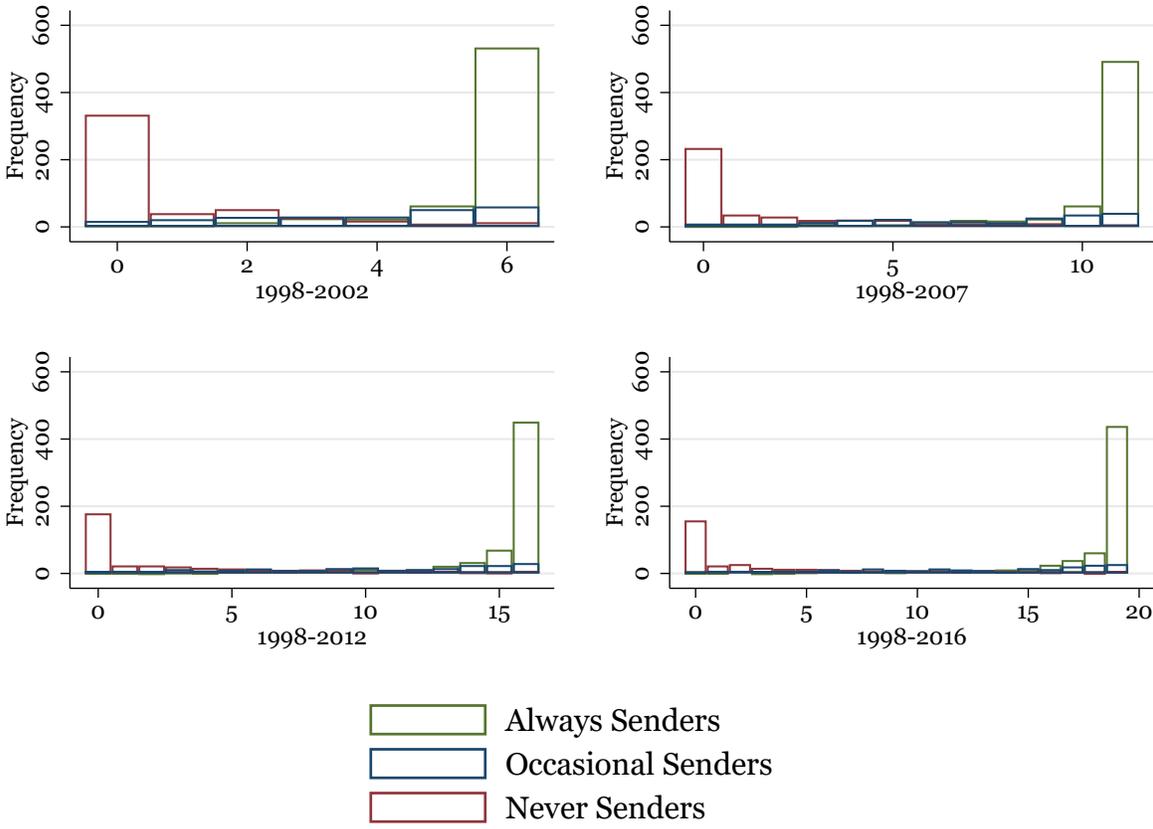
REFERENCES

- Andrews, R. J., Imberman, S. A., & Lovenheim, M. F. (2020). Recruiting and supporting low-income, high-achieving students at flagship universities. *Economics of Education Review*, 74, 101923.
- Andrews, R. J., Ranchhod, V., & Sathy, V. (2010). Estimating the responsiveness of college applications to the likelihood of acceptance and financial assistance: Evidence from Texas. *Economics of Education Review*, 29(1), 104-115.
- Black, S. E., Cortes, K. E., & Lincove, J. A. (2015). Academic undermatching of high-achieving minority students: Evidence from race-neutral and holistic admissions policies. *American Economic Review: Papers & Proceedings*, 105(5), 604-10.
- Black, S. E., Cortes, K. E., & Lincove, J. A. (2016). Efficacy versus equity: What happens when states tinker with college admissions in a race-blind era? *Educational Evaluation and Policy Analysis*, 38(2), 336-363.
- Black, S. E., Cortes, K. E., & Lincove, J. A. (2020). Apply Yourself: Racial and Ethnic Differences in College Application. *Education Finance and Policy*, 15(2): 209-240.
- Black, S. E., Denning, J.T., & Rothstein, J. (2020). *Winners and Losers? The Effect of Gaining and Losing Access to Selective Colleges on Education and Labor Market Outcomes*. (NBER Working Paper No. 26821). Retrieved from National Bureau of Economic Research website: <https://www.nber.org/papers/w26821.pdf>.
- Bucks, B. (2003). The effects of Texas' top ten percent plan on college choice. Unpublished manuscript. Department of Economics, University of Wisconsin-Madison.
- Cancian, M. (1998). Race-based versus class-based affirmative action in college admissions. *Journal of Policy Analysis and Management*, 17, 94-105.
- Chetty, R., Friedman, J. N., Saez, E., Turner, N., & Yagan, D. (2017). *Mobility Report Cards: The Role of Colleges in Intergenerational Mobility*. (NBER Working Paper No. 23618.) Retrieved from National Bureau of Economic Research website: <https://www.nber.org/papers/w23618.pdf>.
- Cortes, K. E. (2010). Do bans on affirmative action hurt minority students? Evidence from the Texas Top 10% Plan. *Economics of Education Review*, 29(6), 1110-1124.
- Cortes, K. E., & Friedson, A. I. (2014). Ranking up by moving out: The effect of the Texas Top 10% Plan on property values. *National Tax Journal*, 67(1): 51-76.
- Cortes, K. E., & Lincove, J. A. (2016). Can admissions percent plans lead to better collegiate fit for minority students? *American Economic Review: Papers & Proceedings*, 106(5), 348-54.

- Cortes, K. E., & Lincove, J. A. (2019). Match or Mismatch? Automatic Admissions and College Preferences of Low- and High-Income Students. *Educational Evaluation and Policy Analysis*, 41(1): 98-123.
- Cullen, J. B., Long, M. C., & Reback, R. (2013). Jockeying for position: Strategic high school choice under Texas' top ten percent plan. *Journal of Public Economics*, 97, 32-48.
- Fisher v. University of Texas at Austin (Fisher I), 133 S. Ct. 2411 (2013).
- Fisher v. University of Texas at Austin (Fisher II), 136 S. Ct. 2198 (2016).
- Giovanola, A. (2005). *Irma Rangel*. Women's Legal History Project. <http://wlh-static.law.stanford.edu/papers05/RangelII-Giovanola05.pdf>.
- Hoekstra, M. (2009). The Effect of Attending the Flagship State University on Earnings: A Discontinuity-Based Approach. *Review of Economics and Statistics*, 91(4): 717-72.
- Hopwood v. University of Texas Law School 78 F.3d 932, 944 (5th Cir. 1996).
- Jenness, J. (2004). Distance and bearing between matched features (distbyid.avx) extension for ArcView 3.x, v. 2. Flagstaff, AZ: Jenness Enterprises.
- Klasik, D., & Dayhoff, J. (2014). *A state-by-state assessment of percent plans as a race neutral means of achieving postsecondary racial diversity*. (Working Paper). Retrieved from Maryland Equity Project website: https://education.umd.edu/sites/education.umd.edu/files/klasikdayhoff_MEP_working_paper_2014_1_0.pdf.
- Long, M. C. (2007). Affirmative action and its alternatives in public universities: What do we know? *Public Administration Review*, 67(1), 311-325.
- Long, M. C., Saenz, V., & Tienda, M. (2010). Policy transparency and college enrollment: Did the Texas top ten percent law broaden access to the public flagships. *The ANNALS of the American Academy of Political and Social Science*, 627(1), 82-105.
- Long, M. (2015). Is there a workable race-neutral alternative to affirmative action? *Journal of Policy Analysis and Management*, 34, 162–183.
- Long, M. C. & Bateman, N. A. (2020). Long-Run Changes in Underrepresentation After Affirmative Action Bans in Public Universities. *Educational Evaluation and Policy Analysis*, 42(2): 188-207.
- Montejano, D. (2001). *Access to the University of Texas at Austin and the Ten Percent Plan: A three-year assessment*. Austin: University of Texas.

- Niu, S. X., & Tienda, M. (2010). The impact of the Texas top ten percent law on college enrollment: A regression discontinuity approach. *Journal of Policy Analysis and Management*, 29(1), 84-110.
- Niu, S. X., Tienda, M., & Cortes, K. E. (2006). College Selectivity and the Texas Top 10% Law: How Constrained Are the Options? *Economics of Education Review*, 25(3): 259-272.
- Reardon, S. F., Baker, R., Kasman, M., Klasik, D., & Townsend, J. B. (2018). What levels of racial diversity can be achieved with socioeconomic-based affirmative action? Evidence from a simulation model. *Journal of Policy Analysis and Management*, 37(3), 668-696.
- Saenz, V. (2007). *Democratization of access: How the top ten percent law has affected the geographic and socio-economic diversity of Texas high school feeders to UT-Austin*. [Paper presentation]. Civil Rights Project Research Conference, Austin, TX.
- Skinner, B. T. (2019). Choosing colleges in the 2000s: An updated analysis using the conditional logistic choice model. *Research in Higher Education*, 60(2), 153-183.
- Smith, J., Goodman, J., & Hurwitz, M. (2020). *The Economic Impact of Access to Public Four-Year Colleges*. (NBER Working Paper No. 27177). Retrieved from National Bureau of Economic Research website: <https://www.nber.org/papers/w27177>.
- Tienda, M., Leicht, K. T., Sullivan, T. A., Maltese, M., & Lloyd, K. (2003). 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.
- Tienda, M., & Niu, S. X. (2006). Capitalizing on segregation, pretending neutrality: College admissions and the Texas top 10% law. *American Law and Economics Review*, 8(2), 312-346.
- Walker, B., & Lavergne, G. (2001). Affirmative Action and Percent Plans: What We Learned in Texas. *College Board Review*, 193, 18-23.

Figure 1: Post-Policy Implementation Sending Patterns of Always-, Occasional-, and Never-sending High Schools to the Flagship Campuses over Time



**Figure 2: Change in Sending Patterns
among Never-Sending High Schools to the Flagship Campuses, 1998-2016**

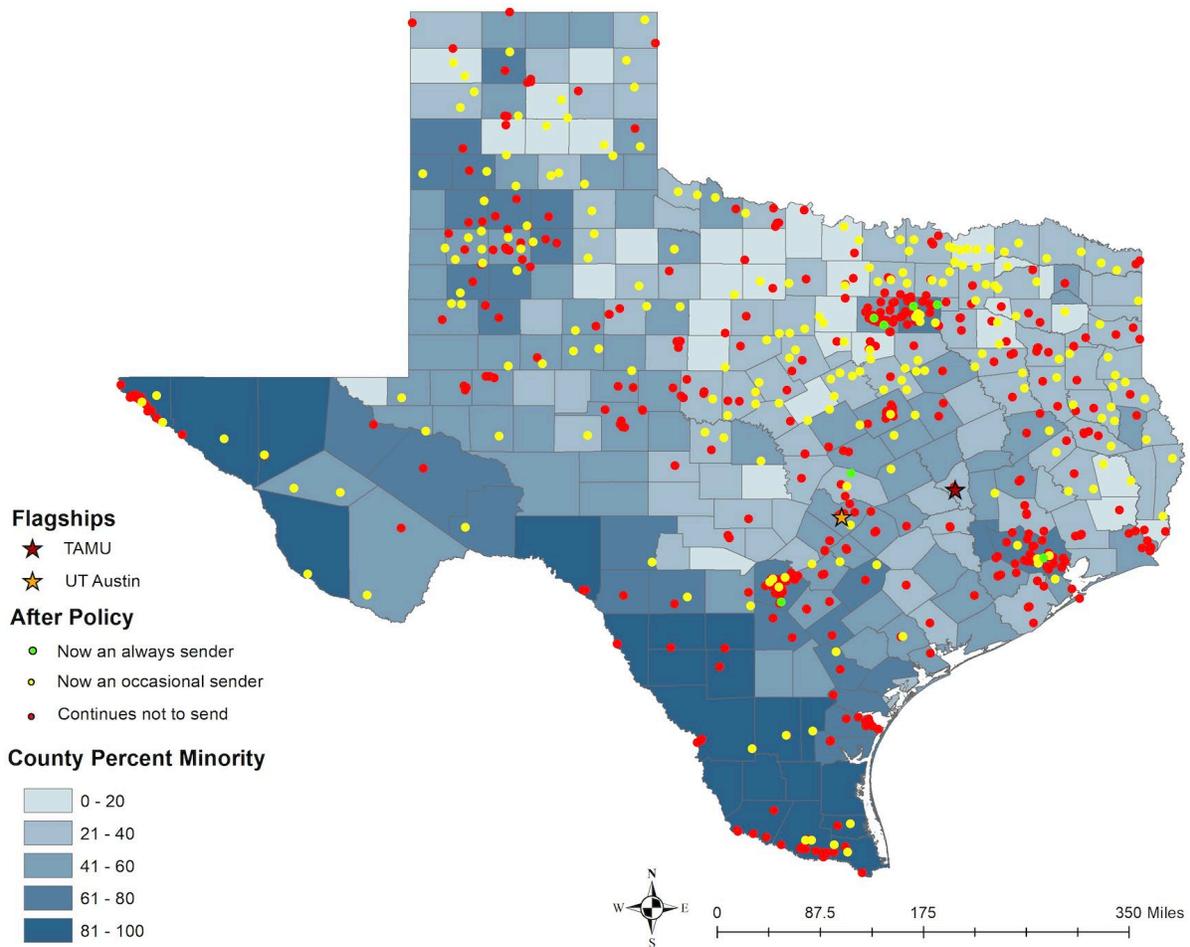


Figure 3: Change in Sending Patterns among Never-Sending High Schools to the Flagship Campuses over Time

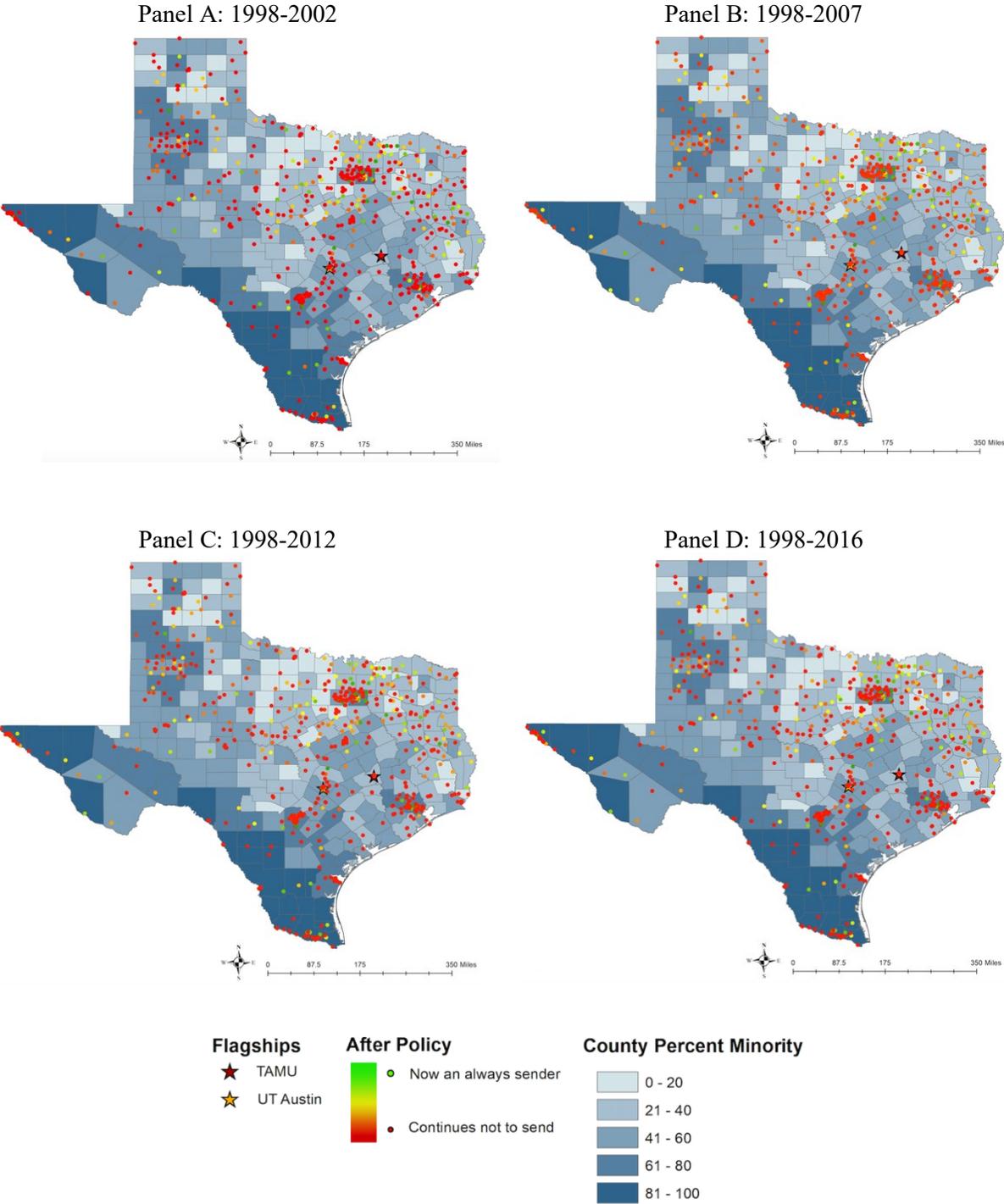


Figure 4: Change in Sending Patterns among Never-Sending High Schools within 50-mile Radius of Each Flagship Campus, 1998-2016

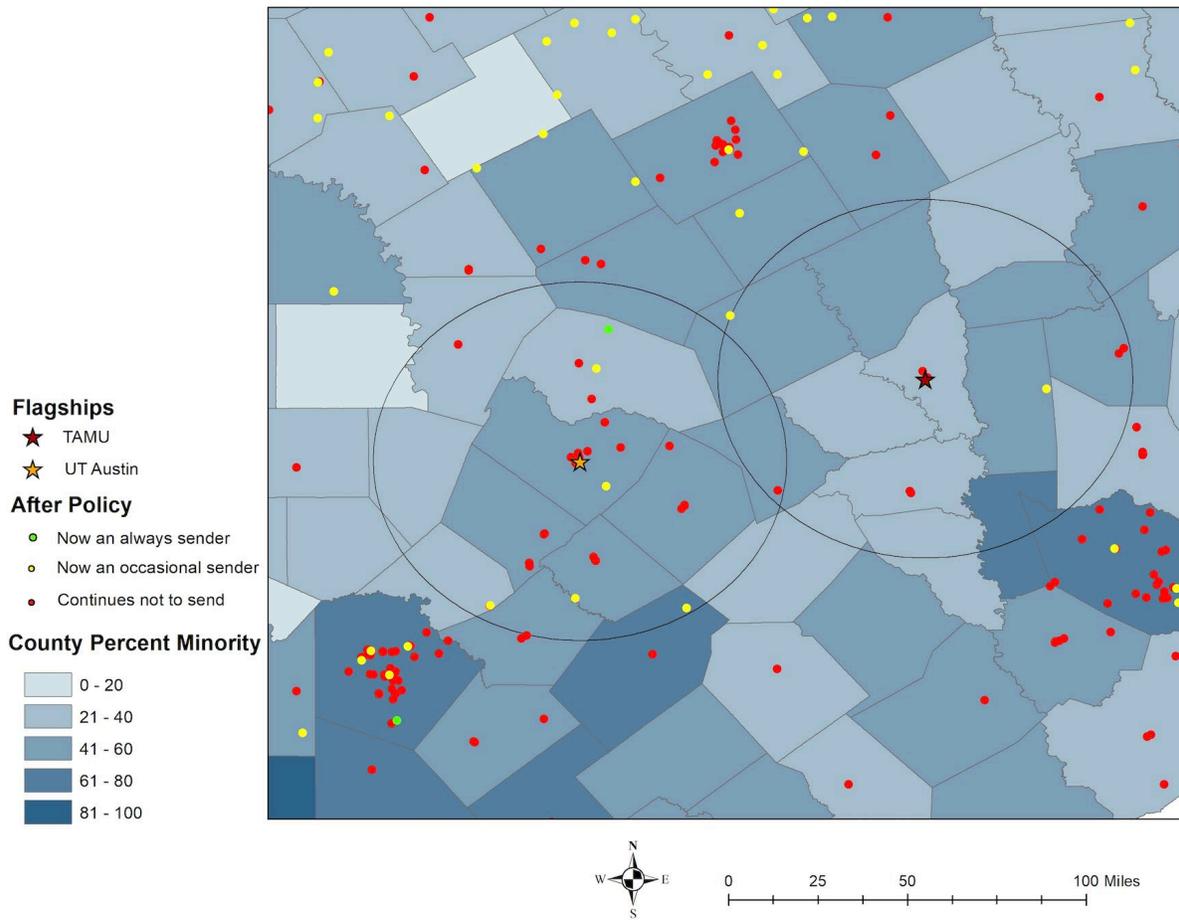


Figure 5: Change in Sending Patterns among Never-Sending High Schools to the Flagship Campuses by Urban Locale Classification, 1998-2016

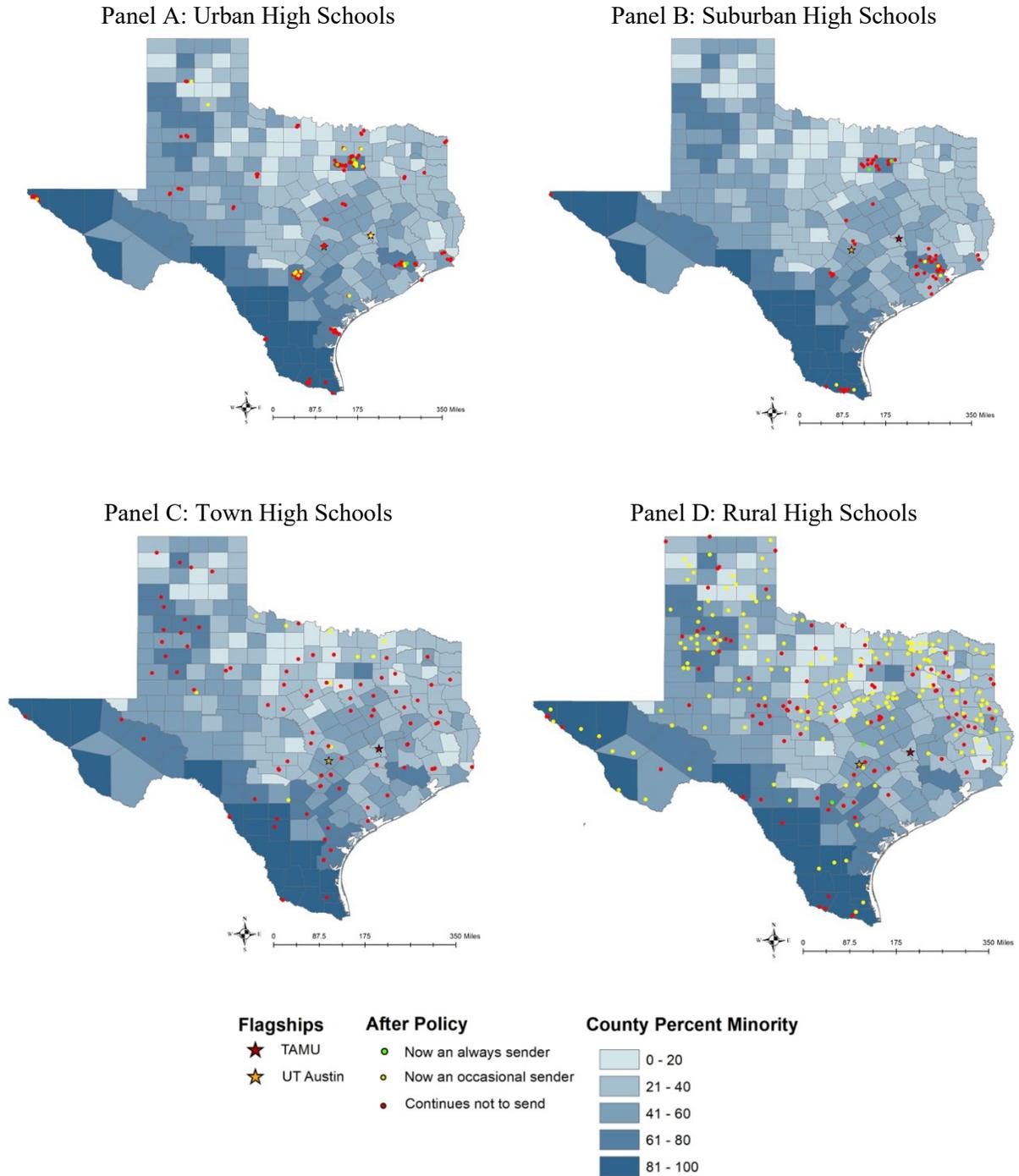
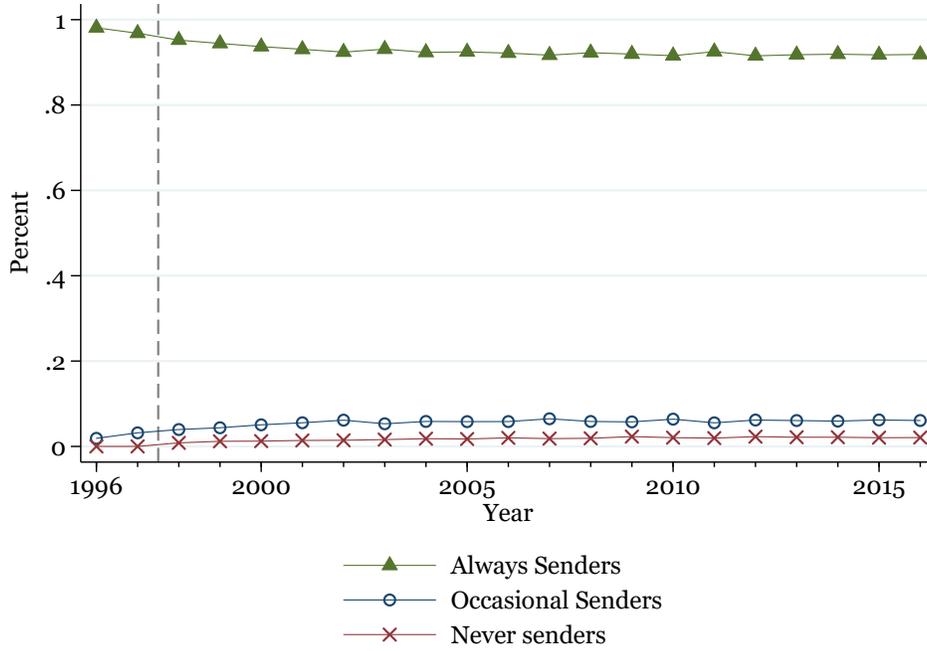


Figure 6: Representation of Students from Always-, Occasional, and Never-Sending High Schools on Flagship Campuses, 1996-2016

Panel A: Percent of Students from High School Types on Flagship Campuses



Panel B: Herfindahl-Hirschman Index by Flagship Campuses

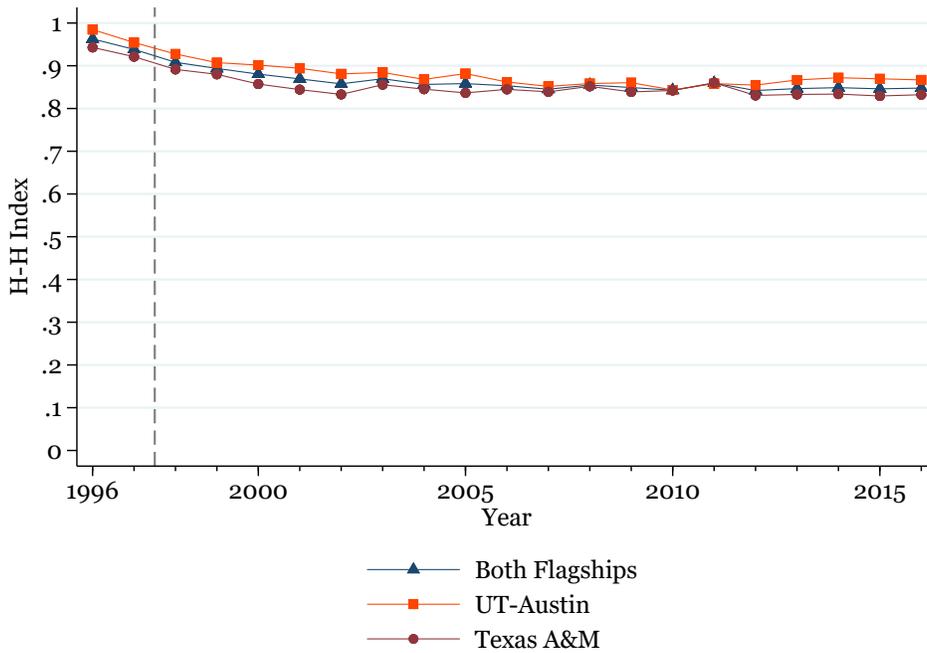
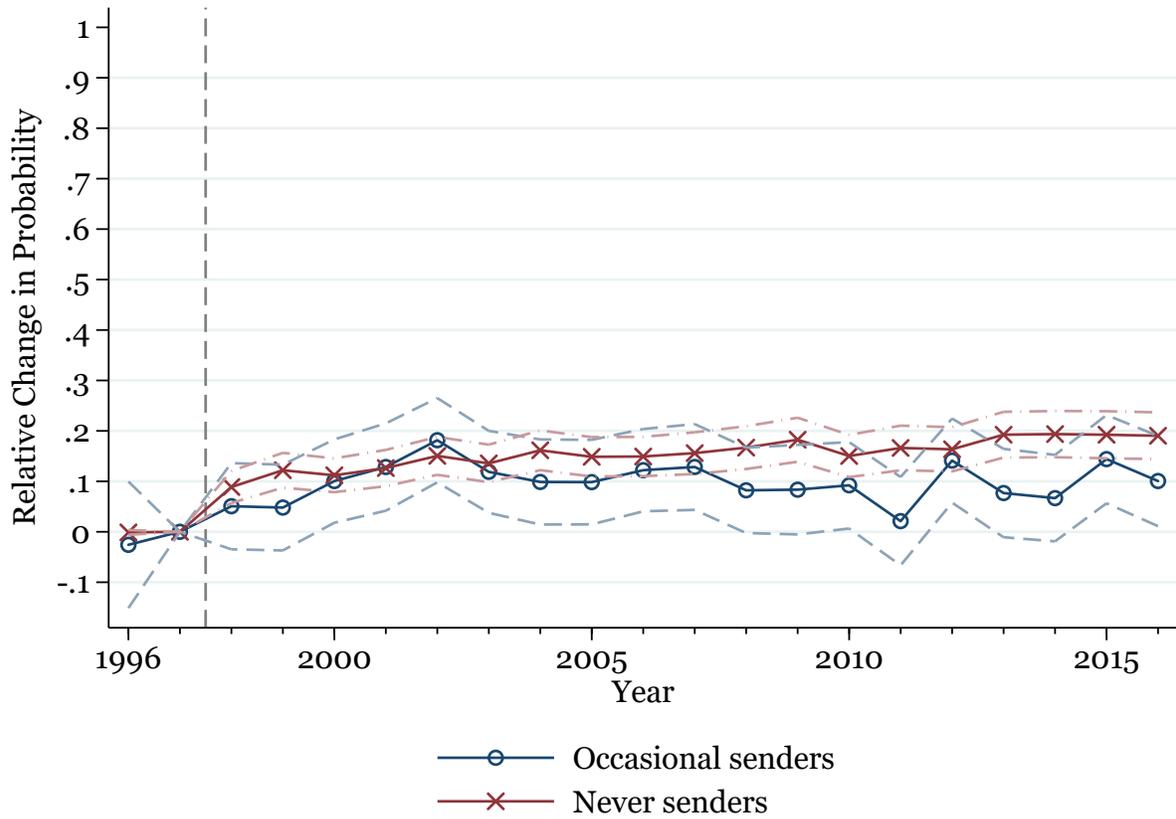


Figure 7: Relative Change in Probability of Sending Students to the Flagship Campuses for Occasional- and Never-Sending High Schools, 1996-2016



Notes: Change in probability relative to the year 1997. 95% confidence intervals of estimates indicated with dashed lines.

Table 1: Pre-Policy Characteristics of Texas Public High Schools -
Two Years (1996 and 1997) Prior to the Enactment of the Top 10% Plan and by Flagship Campus Enrollment

	Panel A: All High Schools	Panel B: All High Schools at Either Flagship Campus	Panel C: All High Schools at UT or TAMU, respectively	
	(1)	(2)	(3)	(4)
Number of High Schools	1,686	922	648	873
Percent of High Schools at Either Flagship Campus	--	54.69	38.43	51.78
<i>Flagship Campus Enrollment:</i>				
Number Students Enrolled in UT	3.34 (10.73)	6.61 (14.37)	9.86 (16.61)	7.01 (14.91)
Number Students Enrolled in TAMU	3.34 (7.58)	6.61 (9.60)	8.75 (11.05)	7.21 (9.81)
Percent Seniors Enrolled in UT	1.09 (2.48)	2.16 (3.13)	3.23 (3.35)	2.08 (3.16)
Percent Seniors Enrolled in TAMU	1.73 (2.81)	3.43 (3.13)	3.01 (2.61)	3.74 (3.08)
<i>High School Demographic Characteristics:</i>				
Percent Black	12.26 (17.92)	11.73 (16.62)	11.90 (15.54)	11.80 (16.45)
Percent Hispanic	31.07 (29.70)	28.47 (28.17)	30.57 (29.04)	27.72 (27.51)
Percent Asian	1.08 (2.72)	1.61 (3.31)	2.17 (3.81)	1.69 (3.41)
Percent White	55.32 (30.65)	57.96 (28.76)	55.13 (28.55)	58.56 (28.26)
Percent Free Lunch Eligible	30.38 (21.52)	26.84 (17.84)	25.30 (18.41)	25.90 (17.19)
Grade 12 Enrollment	118.93 (158.05)	204.81 (177.24)	265.60 (181.82)	212.65 (179.24)
<i>Targeted Recruitment High Schools:</i>				
Century High School (percent)	5.57	8.78	10.01	8.57
Longhorn High School (percent)	3.42	4.76	7.11	3.76
<i>High School SAT Performance:</i>				
Mean High School SAT (Q1 - top)	17.26	25.14	27.97	25.56
Mean High School SAT (Q2)	17.01	26.58	29.93	26.93
Mean High School SAT (Q3)	17.17	25.77	24.13	25.71
Mean High School SAT (Q4 - bottom)	17.01	18.43	15.06	17.70
No High School SAT takers	31.55	4.08	2.90	4.10
<i>High School Location Characteristics:</i>				
Percent Urban	27.11	24.83	32.37	24.81
Percent Suburb	12.86	15.67	21.98	16.27
Percent Town	18.63	22.76	22.35	23.44
Percent Rural	41.40	36.74	23.29	35.48
<i>College Proximity:</i>				
Nearest public flagship campus (100 miles)	1.82 (1.33)	1.59 (1.09)	1.53 (1.11)	1.57 (1.06)
Nearest other (non-flagship) public campus (100 miles)	0.32 (0.26)	0.31 (0.23)	0.26 (0.21)	0.30 (0.23)
Distance to UT (100 miles)	1.99 (1.10)	1.85 (1.03)	1.79 (1.06)	1.84 (1.00)
Distance to TAMU (100 miles)	2.02 (1.31)	1.84 (1.20)	1.79 (1.21)	1.81 (1.17)
Number of Observations (school-by-year)	3,157	1,595	1,069	1,463

Notes: Standard deviations for non-binary variables are shown in parentheses. Pre-policy years are 1996 and 1997. Flagship campuses are the University of Texas at Austin (UT) and Texas A&M University at College Station (TAMU). Column (2) includes high schools that had enrollees at either flagship campus. Column (3) includes high schools that had enrollees at UT. Column (4) includes high schools that had enrollees at TAMU.

Sources: Administrative enrollment data was obtained from the University of Texas at Austin (UT) and Texas A&M University at College Station (TAMU), 1996 and 1997. High school variables are lagged by one year and were obtained from the National Center for Education Statistics's (NCES) Common Core of Data (CCD), 1995 and 1996. The mean high school SAT variable was obtained from the College Board and is based on all Texas students who took the SAT in 1996.

Table 2: Pre-Policy Characteristics of Texas Public High Schools by High School Sending Patterns to the Flagship Campuses Two Years (1996 and 1997) Prior to the Enactment of the Top 10% Plan

	High School Sending Patterns:		
	Always Senders (1)	Occasional Senders (2)	Never Senders (3)
Number of High Schools	673	249	764
<i>Flagship Campus Enrollment:</i>			
Number Students Enrolled in UT	7.71 (15.35)	0.34 (1.89)	- -
Number Students Enrolled in TAMU	7.56 (10.15)	0.75 (1.29)	- -
Percent Seniors Enrolled in UT	2.39 (3.27)	0.48 (1.40)	- -
Percent Seniors Enrolled in TAMU	3.35 (2.78)	1.94 (3.76)	- -
<i>High School Demographic Characteristics:</i>			
Percent Black	11.93 (16.08)	10.79 (19.33)	13.16 (19.08)
Percent Hispanic	28.69 (28.10)	27.24 (28.60)	34.93 (1.23)
Percent Asian	1.79 (3.45)	0.64 (22.20)	0.53 (1.69)
Percent White	57.36 (28.33)	61.12 (30.78)	51.06 (32.29)
Percent Free Lunch Eligible	25.77 (17.55)	33.09 (18.47)	34.09 (25.08)
Grade 12 Enrollment	230.20 (179.03)	64.81 (70.98)	25.51 (52.57)
<i>Targeted Recruitment High Schools:</i>			
Century High School (percent)	9.36	7.09	1.14
Longhorn High School (percent)	4.90	6.29	0.84
<i>High School SAT Performance:</i>			
Mean High School SAT (Q1 - top)	26.00	20.45	7.14
Mean High School SAT (Q2)	27.86	19.84	4.86
Mean High School SAT (Q3)	26.52	21.86	5.85
Mean High School SAT (Q4 - bottom)	16.46	29.15	12.98
No High School SAT takers	3.12	8.70	69.17
<i>High School Location Characteristics:</i>			
Percent Urban	26.89	13.16	32.57
Percent Suburb	17.83	3.85	11.16
Percent Town	24.67	12.55	14.73
Percent Rural	30.61	70.45	41.53
<i>College Proximity:</i>			
Nearest public flagship campus (100 miles)	1.52 (1.06)	1.93 (1.14)	2.09 (1.56)
Nearest other (non-flagship) public campus (100 miles)	0.30 (0.23)	0.38 (0.25)	0.33 (0.29)
Distance to UT (100 miles)	1.79 (1.01)	2.15 (1.04)	2.12 (1.19)
Distance to TAMU (100 miles)	1.78 (1.16)	2.18 (1.28)	2.21 (1.41)
Number of Observations (school-by-year)	1,346	494	1,317

Notes: Standard deviations for non-binary variables are shown in parentheses. Pre-policy years are 1996 and 1997. Flagship campuses are the University of Texas at Austin (UT) and Texas A&M University at College Station (TAMU). *Always Senders* are high schools that sent students to either flagship campus in both of the pre-policy years. *Occasional Senders* are high schools that sent students to either flagship campus in one of the two pre-policy years. *Never Senders* are high schools that did not send any students to either flagship campus in either of the pre-policy years. These descriptive statistics are presented separately for each flagship campus in Table A1.

Sources: Administrative enrollment data were obtained from the University of Texas at Austin (UT) and Texas A&M University at College Station (TAMU), 1996 and 1997. High school variables are lagged by one year and were obtained from the National Center for Education Statistics's (NCES) Common Core of Data (CCD), 1995 and 1996. The mean high school SAT variable was obtained from the College Board and is based on all Texas students who took the SAT in 1996.

Table 3: Linear Probability Models - Enrolled at Flagship Campuses After the Enactment of the Top 10% Plan

Panel A: Enrolled in Either Flagship Campus										
	First 5 Years, Top 10% Plan (1998-2002)					All Years, Top 10% Plan (1998-2016)				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
Post Top 10% Plan	-0.115 ** (0.010)	-0.116 ** (0.010)	-0.115 ** (0.010)	-0.116 ** (0.010)	-0.113 ** (0.010)	-0.108 ** (0.008)	-0.110 ** (0.008)	-0.106 ** (0.008)	-0.109 ** (0.008)	-0.104 ** (0.008)
Never Sending High School	-0.908 ** (0.007)	-0.880 ** (0.009)	-0.904 ** (0.007)	-0.874 ** (0.009)	-0.786 ** (0.013)	-0.890 ** (0.008)	-0.862 ** (0.010)	-0.879 ** (0.008)	-0.846 ** (0.010)	-0.733 ** (0.015)
Occasional Sending High School	-0.423 ** (0.006)	-0.413 ** (0.008)	-0.427 ** (0.006)	-0.417 ** (0.008)	-0.406 ** (0.009)	-0.409 ** (0.007)	-0.397 ** (0.008)	-0.414 ** (0.008)	-0.402 ** (0.009)	-0.386 ** (0.010)
Post x Never Sending	0.222 ** (0.013)	0.220 ** (0.013)	0.221 ** (0.013)	0.220 ** (0.013)	0.212 ** (0.013)	0.270 ** (0.014)	0.267 ** (0.014)	0.265 ** (0.014)	0.263 ** (0.014)	0.245 ** (0.013)
Post x Occasional Sending	0.201 ** (0.021)	0.203 ** (0.021)	0.200 ** (0.021)	0.203 ** (0.021)	0.202 ** (0.022)	0.206 ** (0.020)	0.209 ** (0.020)	0.201 ** (0.020)	0.205 ** (0.020)	0.205 ** (0.020)
Adjusted R ²	0.63	0.63	0.63	0.63	0.64	0.54	0.55	0.54	0.55	0.57

Panel B: Percent of 12th Graders Who Enrolled in Either Flagship Campus										
	First 5 Years, Top 10% Plan (1998-2002)					All Years, Top 10% Plan (1998-2016)				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
Post Top 10% Plan	-0.006 ** (0.001)	-0.006 ** (0.001)	-0.006 ** (0.001)	-0.006 ** (0.001)	-0.006 ** (0.001)	-0.009 ** (0.001)	-0.009 ** (0.001)	-0.009 ** (0.001)	-0.009 ** (0.001)	-0.009 ** (0.001)
Never Sending High School	-0.043 ** (0.002)	-0.039 ** (0.002)	-0.044 ** (0.002)	-0.040 ** (0.002)	-0.039 ** (0.002)	-0.045 ** (0.001)	-0.042 ** (0.001)	-0.046 ** (0.001)	-0.042 ** (0.002)	-0.039 ** (0.002)
Occasional Sending High School	-0.023 ** (0.002)	-0.021 ** (0.002)	-0.022 ** (0.002)	-0.021 ** (0.002)	-0.020 ** (0.002)	-0.025 ** (0.002)	-0.023 ** (0.002)	-0.024 ** (0.002)	-0.023 ** (0.002)	-0.023 ** (0.002)
Post x Never Sending	0.012 ** (0.001)	0.012 ** (0.001)	0.012 ** (0.001)	0.012 ** (0.001)	0.012 ** (0.001)	0.018 ** (0.001)	0.018 ** (0.001)	0.019 ** (0.001)	0.018 ** (0.001)	0.017 ** (0.001)
Post x Occasional Sending	0.009 ** (0.002)	0.009 ** (0.002)	0.009 ** (0.002)	0.010 ** (0.002)	0.010 ** (0.002)	0.013 ** (0.002)	0.013 ** (0.002)	0.013 ** (0.002)	0.014 ** (0.002)	0.013 ** (0.002)
Adjusted R ²	0.39	0.42	0.40	0.43	0.44	0.33	0.37	0.33	0.37	0.38

<i>Controls:</i>										
High School Demographics ^a	X	X	X	X	X	X	X	X	X	X
High School Location ^b		X		X	X		X		X	X
Targeted Recruitment High Schools ^c			X	X	X			X	X	X
High School SAT Performance ^d					X					X
Number of Observations (school-by-year)	11,921	11,921	11,921	11,921	11,921	29,028	29,028	29,028	29,028	29,028

Notes: Standard errors are shown in parentheses and are clustered at the high school level. Pre-policy years are 1996 and 1997. Post-policy years are 1998-2016. Flagship campuses are the University of Texas at Austin (UT) and Texas A&M University at College Station (TAMU). a. High school demographics are time-varying school characteristics: ethnic and racial composition of the student body (percent Hispanic, Black, Asian, and white (omitted category) students); percent free/reduced lunch eligible students; and total number of students enrolled in grade 12. b. High school location characteristics are time-invariant: distance to nearest flagship campus (100 miles); distance to nearest non-flagship four-year public campus (100 miles); and urban locale classification (urban, suburban (omitted category), town, and rural). c. Targeted recruitment high schools are schools who were ever designated as a Longhorn school (UT fellowship program) or Century school (TAMU fellowship program). d. High School SAT Performance are quartile indicator variables of the mean SAT score for test takers among Texas high schools in 1996. To account for a statewide shift in demographics, we also include in all regressions a control for the average percentage of non-white students in high schools across the state. ** p<0.01, * p<0.05, + p<0.10.

Sources: Administrative enrollment data comes from the University of Texas at Austin (UT) and Texas A&M University at College Station (TAMU), 1996-2016. High school variables are lagged by one year and were obtained from the National Center for Education Statistics's (NCES) Common Core of Data (CCD), 1995-2015. The mean high school SAT variable was obtained from the College Board and is based on all Texas students who took the SAT in 1996.

Table 3 (continued): Linear Probability Models - Enrolled at Flagship Campuses After the Enactment of the Top 10% Plan

Panel C: Enrolled in the University of Texas (UT)										
	First 5 Years, Top 10% Plan (1998-2002)					All Years, Top 10% Plan (1998-2016)				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
Post Top 10% Plan	-0.164 ** (0.013)	-0.165 ** (0.013)	-0.160 ** (0.012)	-0.160 ** (0.012)	-0.156 ** (0.012)	-0.151 ** (0.011)	-0.153 ** (0.011)	-0.143 ** (0.010)	-0.146 ** (0.011)	-0.139 ** (0.011)
Never Sending High School	-0.801 ** (0.015)	-0.777 ** (0.016)	-0.802 ** (0.014)	-0.774 ** (0.015)	-0.734 ** (0.014)	-0.765 ** (0.016)	-0.738 ** (0.016)	-0.758 ** (0.015)	-0.727 ** (0.015)	-0.667 ** (0.015)
Occasional Sending High School	-0.346 ** (0.012)	-0.340 ** (0.012)	-0.356 ** (0.013)	-0.350 ** (0.013)	-0.353 ** (0.013)	-0.318 ** (0.013)	-0.312 ** (0.013)	-0.325 ** (0.014)	-0.320 ** (0.014)	-0.320 ** (0.015)
Post x Never Sending	0.244 ** (0.013)	0.242 ** (0.013)	0.237 ** (0.013)	0.235 ** (0.013)	0.228 ** (0.013)	0.305 ** (0.014)	0.303 ** (0.014)	0.291 ** (0.013)	0.288 ** (0.013)	0.273 ** (0.013)
Post x Occasional Sending	0.130 ** (0.023)	0.131 ** (0.023)	0.124 ** (0.023)	0.126 ** (0.023)	0.125 ** (0.023)	0.151 ** (0.021)	0.153 ** (0.021)	0.141 ** (0.021)	0.143 ** (0.021)	0.142 ** (0.021)
Adjusted R ²	0.61	0.61	0.62	0.62	0.63	0.53	0.54	0.55	0.55	0.57
Panel D: Enrolled in Texas A&M University (TAMU)										
	First 5 Years, Top 10% Plan (1998-2002)					All Years, Top 10% Plan (1998-2016)				
	(1)	(2)	(3)	(4)	(5)	(1)	(2)	(3)	(4)	(5)
Post Top 10% Plan	-0.129 ** (0.011)	-0.130 ** (0.011)	-0.126 ** (0.011)	-0.127 ** (0.011)	-0.124 ** (0.011)	-0.145 ** (0.010)	-0.148 ** (0.010)	-0.136 ** (0.009)	-0.141 ** (0.009)	-0.135 ** (0.009)
Never Sending High School	-0.890 ** (0.008)	-0.852 ** (0.010)	-0.876 ** (0.009)	-0.837 ** (0.010)	-0.766 ** (0.013)	-0.858 ** (0.009)	-0.815 ** (0.011)	-0.837 ** (0.009)	-0.793 ** (0.011)	-0.701 ** (0.014)
Occasional Sending High School	-0.421 ** (0.007)	-0.405 ** (0.008)	-0.413 ** (0.007)	-0.398 ** (0.008)	-0.388 ** (0.009)	-0.397 ** (0.007)	-0.377 ** (0.009)	-0.391 ** (0.009)	-0.372 ** (0.010)	-0.357 ** (0.011)
Post x Never Sending	0.245 ** (0.013)	0.243 ** (0.013)	0.240 ** (0.013)	0.239 ** (0.013)	0.231 ** (0.013)	0.294 ** (0.014)	0.289 ** (0.014)	0.283 ** (0.013)	0.278 ** (0.013)	0.262 ** (0.013)
Post x Occasional Sending	0.185 ** (0.021)	0.188 ** (0.021)	0.186 ** (0.020)	0.189 ** (0.020)	0.188 ** (0.021)	0.192 ** (0.018)	0.197 ** (0.018)	0.187 ** (0.018)	0.192 ** (0.018)	0.191 ** (0.018)
Adjusted R ²	0.59	0.59	0.59	0.60	0.61	0.50	0.51	0.51	0.53	0.54
<i>Controls:</i>										
High School Demographics ^a	X	X	X	X	X	X	X	X	X	X
High School Location ^b		X		X	X		X		X	X
Targeted Recruitment High Schools ^c			X	X	X			X	X	X
High School SAT Performance ^d					X					X
Number of Observations (school-by-year)	11,921	11,921	11,921	11,921	11,921	29,028	29,028	29,028	29,028	29,028

Notes: Standard errors are shown in parentheses and are clustered at the high school level. Pre-policy years are 1996 and 1997. Post-policy years are 1998-2016. Flagship campuses are the University of Texas at Austin (UT) and Texas A&M University at College Station (TAMU). a. High school demographics are time-varying school characteristics: ethnic and racial composition of the student body (percent Hispanic, Black, Asian, and white (omitted category) students); percent free/reduced lunch eligible students; and total number of students enrolled in grade 12. b. High school location characteristics are time-invariant: distance to UT (100 miles; Panel C only); distance to TAMU (100 miles; Panel D only), distance to nearest non-flagship four-year campus (100 miles); and urban locale classification (urban, suburban (omitted category), town, and rural). c. Targeted recruitment high schools are schools who were ever designated as a Longhorn school (UT fellowship program) or Century school (TAMU fellowship program). d. High School SAT Performance are quartile indicator variables of the mean SAT score for test takers among Texas high schools in 1996. To account for a statewide shift in demographics, we also include in all regressions a control for the average percentage of non-white students in high schools across the state. ** p<0.01, * p<0.05, + p<0.10.

Sources: Administrative enrollment data comes from the University of Texas at Austin (UT) and Texas A&M University at College Station (TAMU), 1996-2016. High school variables are lagged by one year and were obtained from the National Center for Education Statistics' (NCES) Common Core of Data (CCD), 1995-2015. The mean high school SAT variable was obtained from the College Board and is based on all Texas students who took the SAT in 1996.

Table 4A: Linear Probability Models -

Demographic Changes in High Schools Who Enrolled at the Flagship Campuses After the Enactment of the Top 10% Plan

	Panel A: First 5 Years, Top 10% Plan (1998-2002)					Panel B: All Years, Top 10% Plan (1998-2016)						
	Send to Either		Send to	Send to		Send to Either		Send to	Send to			
	Flagship		UT	TAMU		Flagship		UT	TAMU			
	(1)		(2)	(3)		(1)	(2)	(3)				
Post Top 10% Plan	0.033	*	-0.024	0.064	**	0.057	**	0.029	*	0.068	**	
	(0.016)		(0.015)	(0.016)		(0.015)		(0.014)		(0.015)		
% Hispanic Students	0.001	*	0.001	**	0.001	*	0.000	0.001	*	0.001		
	(0.000)		(0.000)	(0.000)		(0.000)		(0.000)		(0.000)		
Post x % Hispanic Students	0.000		0.001	*	0.000		0.001	+	0.001	**	0.000	
	(0.000)		(0.000)	(0.000)		(0.000)		(0.000)		(0.000)		
% Black Students	0.000		-0.001	*	-0.001		-0.001	**	-0.001	**	-0.002	**
	(0.000)		(0.000)	(0.000)		(0.000)		(0.000)		(0.000)		
Post x % Black Students	0.001	*	0.002	**	0.000		0.002	**	0.002	**	0.001	+
	(0.000)		(0.000)	(0.000)		(0.000)		(0.000)		(0.000)		
% Asian Students	0.000		0.003		0.000		0.000	0.004		-0.002		
	(0.002)		(0.003)	(0.002)		(0.002)		(0.003)		(0.002)		
Post x % Asian Students	-0.004	+	-0.005	+	-0.002		0.001	-0.002		0.001		
	(0.002)		(0.003)	(0.002)		(0.002)		(0.003)		(0.002)		
% Free Lunch Eligible Students	-0.001	**	-0.001	**	-0.002	**	-0.001	**	-0.001	**	-0.001	**
	(0.000)		(0.000)	(0.000)		(0.000)		(0.000)		(0.000)		
Post x % Free Lunch Eligible Students	-0.001	**	0.000		-0.001	+	-0.001	**	-0.001	+	-0.001	*
	(0.000)		(0.000)	(0.000)		(0.000)		(0.000)		(0.000)		
Grade 12 Enrollment	0.001	**	0.002	**	0.001	**	0.001	**	0.001	**	0.001	**
	(0.000)		(0.000)	(0.000)		(0.000)		(0.000)		(0.000)		
Post x Grade 12 Enrollment	0.000	**	0.000	+	0.000	**	0.000	**	0.000	**	0.000	**
	(0.000)		(0.000)	(0.000)		(0.000)		(0.000)		(0.000)		
Adjusted R ²	0.50		0.51		0.47		0.46		0.50		0.45	

Controls:

High School Location ^a	X	X	X	X	X	X	X
Targeted Recruitment High Schools ^b	X	X	X	X	X	X	X
High School SAT Performance ^c	X	X	X	X	X	X	X
Number of Observations (school-by-year)	11,921	11,921	11,921	29,028	29,028	29,028	

Notes: Standard errors are shown in parentheses and are clustered at the high school level. Pre-policy years are 1996 and 1997. Post-policy years are 1998-2016. Flagship campuses are the University of Texas at Austin (UT) and Texas A&M University at College Station (TAMU). a. High school location characteristics are time-invariant: distance to nearest flagship campus (100 miles; "send to either" regressions only); distance to UT (100 miles; "send to UT" regressions only); distance to TAMU (100 miles; "send to TAMU" regressions only); distance to nearest non-flagship four-year public campus (100 miles); and urban locale classification (urban, suburban (omitted category), town, and rural). b. Targeted recruitment high schools are schools who were ever designated as a Longhorn school (UT fellowship program) or Century school (TAMU fellowship program). c. High School SAT Performance are quartile indicator variables of the mean SAT score for test takers among Texas high schools in 1996. To account for a statewide shift in demographics, we also include in all regressions a control for the average percentage of non-white students in high schools across the state. ** p<0.01, * p<0.05, + p<0.10.

Sources: Administrative enrollment data comes from the University of Texas at Austin (UT) and Texas A&M University at College Station (TAMU), 1996-2016. High school variables are lagged by one year and were obtained from the National Center for Education Statistics's (NCES) Common Core of Data (CCD), 1995-2015. The mean high school SAT variable was obtained from the College Board and is based on all Texas students who took the SAT in 1996.

Table 4B: Linear Probability Models -
 Targeted Recruitment Changes in High Schools Who Enrolled at the Flagship Campuses After the Enactment of the Top 10% Plan

	Panel A: First 5 Years, Top 10% Plan (1998-2002)			Panel B: All Years, Top 10% Plan (1998-2016)		
	Send to Either Flagship (1)	Send to UT (2)	Send to TAMU (3)	Send to Either Flagship (1)	Send to UT (2)	Send to TAMU (3)
Post Top 10% Plan	-0.004 (0.008)	-0.016 + (0.008)	0.003 (0.009)	0.015 * (0.007)	0.029 ** (0.007)	0.003 (0.007)
Longhorn High Schools	0.003 (0.056)	0.129 ** (0.048)		0.009 (0.057)	0.122 * (0.049)	
Post x Longhorn High Schools	0.162 ** (0.049)	0.159 ** (0.046)		0.153 ** (0.053)	0.166 ** (0.050)	
Century High Schools	0.087 * (0.039)		0.194 ** (0.037)	0.090 * (0.039)		0.191 ** (0.037)
Post x Century High Schools	-0.001 (0.033)		0.061 * (0.029)	0.048 (0.035)		0.111 ** (0.032)
Adjusted R ²	0.50	0.51	0.47	0.46	0.50	0.45
<i>Controls:</i>						
High School Demographics ^a	X	X	X	X	X	X
High School Location ^b	X	X	X	X	X	X
High School SAT Performance ^c	X	X	X	X	X	X
Number of Observations (school-by-year)	11,921	11,921	11,921	29,028	29,028	29,028

Notes: Standard errors are shown in parentheses and are clustered at the high school level. Pre-policy years are 1996 and 1997. Post-policy years are 1998-2016. Flagship campuses are the University of Texas at Austin (UT) and Texas A&M University at College Station (TAMU). Targeted recruitment high schools are schools who were ever designated as a Longhorn school (UT fellowship program) or Century school (TAMU fellowship program). a. High school demographics are time-varying school characteristics: ethnic and racial composition of the student body (percent Hispanic, black, Asian, and white (omitted category) students); percent free/reduced lunch eligible students; and total number of students enrolled in grade 12. b. High school location characteristics are time-invariant: distance to nearest flagship campus (100 miles; "send to either" regressions only); distance to UT (100 miles; "send to UT" regressions only); distance to TAMU (100 miles; "send to TAMU" regressions only); distance to nearest non-flagship four-year public campus (100 miles); and urban locale classification (urban, suburban (omitted category), town, and rural). c. High School SAT Performance are quartile indicator variables of the mean SAT score for test takers among Texas high schools in 1996. To account for a statewide shift in demographics, we also include in all regressions a control for the average percentage of non-white students in high schools across the state. ** p<0.01, * p<0.05, + p<0.10.

Sources: Administrative enrollment data comes from the University of Texas at Austin (UT) and Texas A&M University at College Station (TAMU), 1996-2016. High school variables are lagged by one year and were obtained from the National Center for Education Statistics's (NCES) Common Core of Data (CCD), 1995-2015. The mean high school SAT variable was obtained from the College Board and is based on all Texas students who took the SAT in 1996.

Table 4C: Linear Probability Models - SAT

Performance Changes in High Schools Who Enrolled at the Flagship Campuses After the Enactment of the Top 10% Plan

	Panel A: First 5 Years, Top 10% Plan (1998-2002)			Panel B: All Years, Top 10% Plan (1998-2016)								
	Send to Either Flagship	Send to UT	Send to TAMU	Send to Either Flagship	Send to UT	Send to TAMU						
	(1)	(2)	(3)	(1)	(2)	(3)						
Post Top 10% Plan	-0.046 (0.017)	**	-0.067 (0.018)	**	-0.020 (0.017)		-0.043 (0.017)	**	-0.044 (0.017)	*	-0.035 (0.016)	*
Mean High School SAT (Q2)	0.046 (0.026)	+	0.038 (0.027)		0.041 (0.026)		0.043 (0.026)	+	0.036 (0.027)		0.037 (0.026)	
Post x Mean High School SAT (Q2)	0.028 (0.023)		0.013 (0.023)		0.038 (0.023)	+	0.016 (0.022)		0.027 (0.023)		0.022 (0.022)	
Mean High School SAT (Q3)	0.049 (0.027)	+	-0.027 (0.027)		0.043 (0.028)		0.044 (0.027)		-0.034 (0.027)		0.037 (0.028)	
Post x Mean High School SAT (Q3)	0.056 (0.022)	*	0.096 (0.025)	**	0.039 (0.023)	+	0.081 (0.023)	**	0.119 (0.025)	**	0.064 (0.023)	**
Mean High School SAT (Q4 - bottom)	-0.125 (0.032)	**	-0.195 (0.028)	**	-0.106 (0.031)	**	-0.136 (0.032)	**	-0.212 (0.028)	**	-0.116 (0.032)	**
Post x Mean High School SAT (Q4 - bottom)	0.101 (0.027)	**	0.148 (0.025)	**	0.038 (0.027)		0.130 (0.027)	**	0.183 (0.025)	**	0.068 (0.027)	*
Adjusted R ²	0.50		0.52		0.47		0.46		0.50		0.45	
<i>Controls:</i>												
High School Demographics ^a	X		X		X		X		X		X	
High School Location ^b	X		X		X		X		X		X	
Targeted Recruitment High Schools ^c	X		X		X		X		X		X	
Number of Observations (school-by-year)	11,921		11,921		11,921		29,028		29,028		29,028	

Notes: Standard errors are shown in parentheses and are clustered at the high school level. Pre-policy years are 1996 and 1997. Post-policy years are 1998-2016. Flagship campuses are the University of Texas at Austin (UT) and Texas A&M University at College Station (TAMU). SAT performance are quartile indicator variables of the mean SAT score for test takers among Texas high schools in 1996. a. High school demographics are time-varying school characteristics: ethnic and racial composition of the student body (percent Hispanic, black, Asian, and white (omitted category) students); percent free/reduced lunch eligible students; and total number of students enrolled in grade 12. b. High school location characteristics are time-invariant: distance to nearest flagship campus (100 miles; "send to either" regressions only); distance to UT (100 miles; "send to UT" regressions only); distance to TAMU (100 miles; "send to TAMU" regressions only); distance to nearest non-flagship four-year public campus (100 miles); and urban locale classification (urban, suburban (omitted category), town, and rural). c. Targeted recruitment high schools are schools who were ever designated as a Longhorn school (UT fellowship program) or Century school (TAMU fellowship program). To account for a statewide shift in demographics, we also include in all regressions a control for the average percentage of non-white students in high schools across the state. ** p<0.01, * p<0.05, + p<0.10.

Sources: Administrative enrollment data comes from the University of Texas at Austin (UT) and Texas A&M University at College Station (TAMU), 1996-2016. High school variables are lagged by one year and were obtained from the National Center for Education Statistics's (NCES) Common Core of Data (CCD), 1995-2015. The mean high school SAT variable was obtained from the College Board and is based on all Texas students who took the SAT in 1996.

Table 4D: Linear Probability Models -
Geographical Changes in High Schools Who Enrolled at Flagship Campuses After the Enactment of the Top 10% Plan

	Panel A: First 5 Years, Top 10% Plan (1998-2002)			Panel B: All Years, Top 10% Plan (1998-2016)		
	Send to Either Flagship (1)	Send to UT (2)	Send to TAMU (3)	Send to Either Flagship (1)	Send to UT (2)	Send to TAMU (3)
Post Top 10% Plan	-0.036 (0.016)	* -0.052 (0.019)	** -0.014 (0.016)	-0.004 (0.017)	-0.025 (0.019)	0.020 (0.017)
Distance to nearest flagship campus (100 miles)	-0.028 (0.006)	**		-0.027 (0.006)	**	
Post x Distance to nearest flagship (100 miles)	-0.005 (0.005)			-0.013 (0.005)	*	
Distance to UT (100 miles)		-0.030 (0.005)	**		-0.031 (0.005)	**
Post x Distance to UT (100 miles)		-0.009 (0.005)	+		-0.012 (0.005)	*
Distance to TAMU (100 miles)			-0.022 (0.005)			** -0.022 (0.005)
Post x Distance to TAMU (100 miles)			-0.015 (0.005)			** -0.032 (0.005)
Distance to nearest other public campus (100 miles)	0.056 (0.030)	+ 0.012 (0.027)	0.025 (0.031)	0.049 (0.030)	0.013 (0.027)	0.019 (0.031)
Post x Distance to nearest other public (100 miles)	-0.042 (0.030)	-0.059 (0.029)	* 0.001 (0.030)	-0.056 (0.031)	+ -0.047 (0.028)	+ -0.007 (0.029)
Percent Urban	-0.052 (0.022)	* -0.089 (0.023)	** -0.035 (0.023)	-0.061 (0.022)	** -0.104 (0.023)	** -0.039 (0.023)
Post x Percent Urban	0.061 (0.016)	** 0.090 (0.019)	** 0.037 (0.017)	0.087 (0.017)	** 0.123 (0.019)	** 0.069 (0.018)
Percent Town	0.133 (0.026)	** 0.023 (0.028)	** 0.168 (0.027)	0.123 (0.025)	** 0.004 (0.028)	** 0.157 (0.027)
Post x Percent Town	0.060 (0.019)	** 0.105 (0.024)	** 0.056 (0.021)	0.066 (0.020)	** 0.116 (0.023)	** 0.046 (0.022)
Percent Rural	0.030 (0.027)	-0.098 (0.027)	** 0.048 (0.027)	0.007 (0.025)	-0.125 (0.025)	** 0.025 (0.026)
Post x Percent Rural	0.079 (0.019)	** 0.085 (0.021)	** 0.075 (0.019)	0.081 (0.020)	** 0.107 (0.020)	** 0.074 (0.021)
Adjusted R ²	0.50	0.51	0.47	0.46	0.50	0.45
<i>Controls:</i>						
High School Demographics ^a	X	X	X	X	X	X
Targeted Recruitment High Schools ^b	X	X	X	X	X	X
High School SAT Performance ^c	X	X	X	X	X	X
Number of Observations (school-by-year)	11,921	11,921	11,921	29,028	29,028	29,028

Notes: Standard errors are shown in parentheses and are clustered at the high school level. Pre-policy years are 1996 and 1997. Post-policy years are 1998-2016. Flagship campuses are the University of Texas at Austin (UT) and Texas A&M University at College Station (TAMU). Suburban is the omitted category in all regressions. a. High school demographics are time-varying school characteristics: ethnic and racial composition of the student body (percent Hispanic, black, Asian, and white (omitted category) students); percent free/reduced lunch eligible students; and total number of students enrolled in grade 12. b. Targeted recruitment high schools are schools who were ever designated as a Longhorn school (UT fellowship program) or Century school (TAMU fellowship program). c. High School SAT Performance are quartile indicator variables of the mean SAT score for test takers among Texas high schools in 1996. To account for a statewide shift in demographics, we also include in all regressions a control for the average percentage of non-white students in high schools across the state. ** p<0.01, * p<0.05, + p<0.10.

Sources: Administrative enrollment data comes from the University of Texas at Austin (UT) and Texas A&M University at College Station (TAMU), 1996-2016. High school variables are lagged by one year and were obtained from the National Center for Education Statistics's (NCES) Common Core of Data (CCD), 1995-2015. The mean high school SAT variable was obtained from the College Board and is based on all Texas students who took the SAT in 1996.

Table 5A: Linear Probability Models -
Demographic Changes in High Schools Who Enrolled at the Flagship Campuses After the Enactment of the Top 10% Plan

	Panel A: First 5 Years, Top 10% Plan (1998-2002)						Panel B: All Years, Top 10% Plan (1998-2016)					
	Sent > 10th ptile of always senders		Sent > 25th ptile of always senders		Sent > 50th ptile of always senders		Sent > 10th ptile of always senders		Sent > 25th ptile of always senders		Sent > 50th ptile of always senders	
	(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)	(3)	(4)	(5)	(6)
Post Top 10% Plan	0.006 (0.018)	0.020 (0.017)	0.046 (0.016)	**			0.037 (0.017)	*	0.048 (0.016)	**	0.089 (0.015)	**
% Hispanic Students	0.001 (0.000)	0.001 (0.000)	0.001 (0.000)	*	**		0.000 (0.000)		0.000 (0.000)		0.001 (0.000)	*
Post x % Hispanic Students	0.000 (0.000)	0.000 (0.000)	-0.001 (0.000)	+	+		0.000 (0.000)		0.000 (0.000)		0.000 (0.000)	
% Black Students	-0.001 (0.001)	**	-0.001 (0.000)	+	-0.001 (0.000)	+	-0.003 (0.001)	**	-0.002 (0.000)	**	-0.002 (0.000)	**
Post x % Black Students	0.001 (0.000)	+	0.000 (0.000)		0.000 (0.000)		0.002 (0.000)	**	0.001 (0.000)	*	0.000 (0.000)	
% Asian Students	0.005 (0.003)	+	0.008 (0.003)	**	0.011 (0.003)	**	0.004 (0.003)		0.007 (0.003)	*	0.011 (0.003)	**
Post x % Asian Students	-0.004 (0.003)		-0.003 (0.003)		-0.002 (0.003)		-0.001 (0.003)		0.000 (0.003)		0.001 (0.003)	
% Free Lunch Eligible Students	-0.002 (0.000)	**	-0.002 (0.000)	**	-0.002 (0.000)	**	-0.002 (0.000)	**	-0.002 (0.000)	**	-0.002 (0.000)	**
Post x % Free Lunch Eligible Students	-0.001 (0.000)	+	0.000 (0.000)		0.000 (0.000)		-0.001 (0.000)	**	-0.001 (0.000)	*	-0.001 (0.000)	*
Grade 12 Enrollment	0.001 (0.000)	**	0.001 (0.000)	**	0.001 (0.000)	**	0.001 (0.000)	**	0.001 (0.000)	**	0.001 (0.000)	**
Post x Grade 12 Enrollment	0.000 (0.000)		0.000 (0.000)	*	0.000 (0.000)	**	0.000 (0.000)	**	0.000 (0.000)	**	0.000 (0.000)	**
Adjusted R ²	0.41	0.36	0.31				0.38	0.32	0.28			
<i>Controls:</i>												
High School Location ^a	X	X	X		X		X	X	X		X	
Targeted Recruitment High Schools ^b	X	X	X		X		X	X	X		X	
High School SAT Performance ^c	X	X	X		X		X	X	X		X	
Number of Observations (school-by-year)	11,921	11,921	11,921		29,028		29,028	29,028	29,028		29,028	

Notes: Standard errors are shown in parentheses and are clustered at the high school level. Pre-policy years are 1996 and 1997. Post-policy years are 1998-2016. Flagship campuses are the University of Texas at Austin (UT) and Texas A&M University at College Station (TAMU). a. High school location characteristics are time-invariant: distance to nearest flagship campus (100 miles); distance to nearest non-flagship four-year public campus (100 miles); and urban locale classification (urban, suburban (omitted category), town, and rural). b. Targeted recruitment high schools are schools who were ever designated as a Longhorn school (UT fellowship program) or Century school (TAMU fellowship program). c. High School SAT Performance are quartile indicator variables of the mean SAT score for test takers among Texas high schools in 1996. To account for a statewide shift in demographics, we also include in all regressions a control for the average percentage of non-white students in high schools across the state. ** p<0.01, * p<0.05, + p<0.10.

Sources: Administrative enrollment data comes from the University of Texas at Austin (UT) and Texas A&M University at College Station (TAMU), 1996-2016. High school variables are lagged by one year and were obtained from the National Center for Education Statistics's (NCES) Common Core of Data (CCD), 1995-2015. The mean high school SAT variable was obtained from the College Board and is based on all Texas students who took the SAT in 1996.

Table 5B: Linear Probability Models -
Targeted Recruitment Changes in High Schools Who Enrolled at the Flagship Campuses After the Enactment of the Top 10% Plan

	Panel A: First 5 Years, Top 10% Plan (1998-2002)						Panel B: All Years, Top 10% Plan (1998-2016)					
	Sent > 10th		Sent > 25th		Sent > 50th		Sent > 10th		Sent > 25th		Sent > 50th	
	ptile of always senders		ptile of always senders		ptile of always senders		ptile of always senders		ptile of always senders		ptile of always senders	
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Post Top 10% Plan	-0.017 (0.010)	+	-0.007 (0.010)		-0.003 (0.009)		0.004 (0.008)		0.005 (0.008)		0.011 (0.008)	
Longhorn High Schools	-0.194 (0.051)	**	-0.178 (0.054)	**	-0.205 (0.039)	**	-0.179 (0.052)	**	-0.160 (0.055)	**	-0.171 (0.042)	**
Post x Longhorn High Schools	0.116 (0.052)	*	0.019 (0.051)		0.014 (0.031)		0.172 (0.054)	**	0.099 (0.054)	+	0.073 (0.035)	*
Century High Schools	0.031 (0.046)		0.006 (0.048)		-0.026 (0.044)		0.033 (0.046)		0.012 (0.048)		0.000 (0.044)	
Post x Century High Schools	0.073 (0.041)	+	0.022 (0.043)		-0.049 (0.031)		0.139 (0.044)	**	0.075 (0.045)	+	-0.035 (0.035)	
Adjusted R ²	0.41		0.36		0.31		0.38		0.32		0.27	
<i>Controls:</i>												
High School Demographics ^a	X		X		X		X		X		X	
High School Location ^b	X		X		X		X		X		X	
High School SAT Performance ^c	X		X		X		X		X		X	
Number of Observations (school-by-year)	11,921		11,921		11,921		29,028		29,028		29,028	

Notes: Standard errors are shown in parentheses and are clustered at the high school level. Pre-policy years are 1996 and 1997. Post-policy years are 1998-2016. Flagship campuses are the University of Texas at Austin (UT) and Texas A&M University at College Station (TAMU). Targeted recruitment high schools are schools who were ever designated as a Longhorn school (UT fellowship program) or Century school (TAMU fellowship program). a. High school demographics are time-varying school characteristics: ethnic and racial composition of the student body (percent Hispanic, black, Asian, and white (omitted category) students); percent free/reduced lunch eligible students; and total number of students enrolled in grade 12. b. High school location characteristics are time-invariant: distance to nearest flagship campus (100 miles); distance to nearest non-flagship four-year public campus (100 miles); and urban locale classification (urban, suburban (omitted category), town, and rural). c. High School SAT Performance are quartile indicator variables of the mean SAT score for test takers among Texas high schools in 1996. To account for a statewide shift in demographics, we also include in all regressions a control for the average percentage of non-white students in high schools across the state. ** p<0.01, * p<0.05, + p<0.10.

Sources: Administrative enrollment data comes from the University of Texas at Austin (UT) and Texas A&M University at College Station (TAMU), 1996-2016. High school variables are lagged by one year and were obtained from the National Center for Education Statistics's (NCES) Common Core of Data (CCD), 1995-2015. The mean high school SAT variable was obtained from the College Board and is based on all Texas students who took the SAT in 1996.

Table 5C: Linear Probability Models - SAT

Performance Changes in High Schools Who Enrolled at the Flagship Campuses After the Enactment of the Top 10% Plan

	Panel A: First 5 Years, Top 10% Plan (1998-2002)			Panel B: All Years, Top 10% Plan (1998-2016)		
	Sent > 10th pctile of always senders (1)	Sent > 25th pctile of always senders (2)	Sent > 50th pctile of always senders (3)	Sent > 10th pctile of always senders (1)	Sent > 25th pctile of always senders (2)	Sent > 50th pctile of always senders (3)
Post Top 10% Plan	-0.057** (0.019)	-0.061** (0.020)	-0.048* (0.019)	-0.051** (0.018)	-0.055** (0.018)	-0.044* (0.018)
Mean High School SAT (Q2)	0.031 (0.027)	0.010 (0.028)	-0.018 (0.031)	0.026 (0.027)	0.006 (0.028)	-0.020 (0.031)
Post x Mean High School SAT (Q2)	0.020 (0.025)	0.034 (0.025)	0.037 (0.026)	0.012 (0.024)	0.014 (0.024)	0.012 (0.026)
Mean High School SAT (Q3)	-0.018 (0.029)	-0.070* (0.030)	-0.119** (0.031)	-0.026 (0.029)	-0.077* (0.030)	-0.125** (0.031)
Post x Mean High School SAT (Q3)	0.070** (0.026)	0.087** (0.028)	0.063* (0.027)	0.082** (0.026)	0.081** (0.026)	0.063* (0.026)
Mean High School SAT (Q4 - bottom)	-0.203** (0.033)	-0.232** (0.032)	-0.207** (0.030)	-0.224** (0.033)	-0.249** (0.033)	-0.214** (0.030)
Post x Mean High School SAT (Q4 - bottom)	0.106** (0.030)	0.103** (0.028)	0.053* (0.024)	0.153** (0.030)	0.144** (0.028)	0.089** (0.024)
Adjusted R ²	0.41	0.36	0.31	0.38	0.32	0.27
<i>Controls:</i>						
High School Demographics ^a	X	X	X	X	X	X
High School Location ^b	X	X	X	X	X	X
Targeted Recruitment High Schools ^c	X	X	X	X	X	X
Number of Observations (school-by-year)	11,921	11,921	11,921	29,028	29,028	29,028

Notes: Standard errors are shown in parentheses and are clustered at the high school level. Pre-policy years are 1996 and 1997. Post-policy years are 1998-2016. Flagship campuses are the University of Texas at Austin (UT) and Texas A&M University at College Station (TAMU). SAT performance are quartile indicator variables of the mean SAT score for test takers among Texas high schools in 1996. a. High school demographics are time-varying school characteristics: ethnic and racial composition of the student body (percent Hispanic, black, Asian, and white (omitted category) students); percent free/reduced lunch eligible students; and total number of students enrolled in grade 12. b. High school location characteristics are time-invariant: distance to nearest flagship campus (100 miles); distance to nearest non-flagship four-year public campus (100 miles); and urban locale classification (urban, suburban (omitted category), town, and rural). c. Targeted recruitment high schools are schools who were ever designated as a Longhorn school (UT fellowship program) or Century school (TAMU fellowship program). To account for a statewide shift in demographics, we also include in all regressions a control for the average percentage of non-white students in high schools across the state. ** p<0.01, * p<0.05, + p<0.10.

Sources: Administrative enrollment data comes from the University of Texas at Austin (UT) and Texas A&M University at College Station (TAMU), 1996-2016. High school variables are lagged by one year and were obtained from the National Center for Education Statistics's (NCES) Common Core of Data (CCD), 1995-2015. The mean high school SAT variable was obtained from the College Board and is based on all Texas students who took the SAT in 1996.

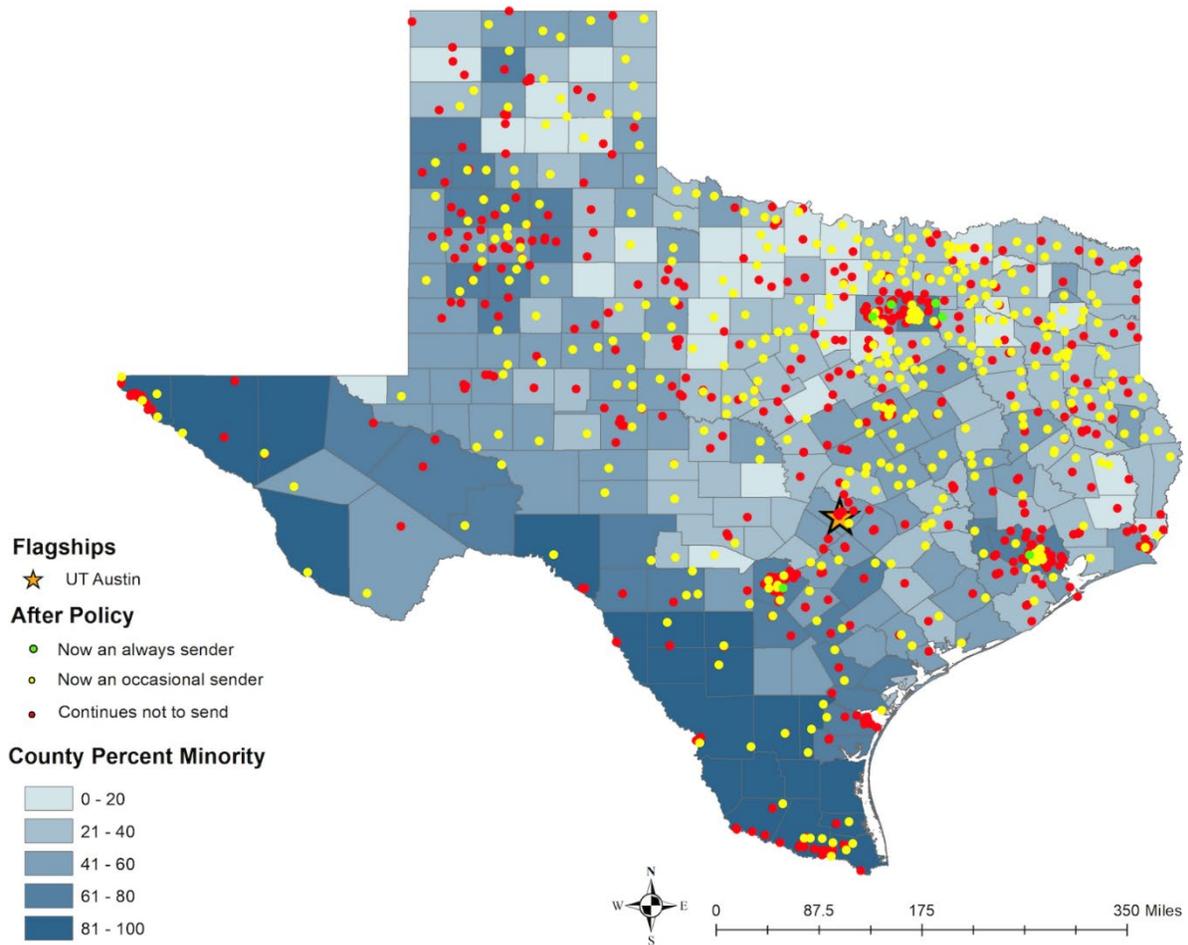
Table 5D: Linear Probability Models -
Geographical Changes in High Schools Who Enrolled at the Flagship Campuses After the Enactment of the Top 10% Plan

	Panel A: First 5 Years, Top 10% Plan (1998-2002)						Panel B: All Years, Top 10% Plan (1998-2016)					
	Sent > 10th		Sent > 25th		Sent > 50th		Sent > 10th		Sent > 25th		Sent > 50th	
	ptile of always		ptile of always		ptile of always		ptile of always		ptile of always		ptile of always	
	senders		senders	senders		senders	senders	senders	senders	senders		senders
	(1)		(2)	(3)		(1)	(2)	(3)		(1)	(2)	(3)
Post Top 10% Plan	-0.029		-0.006		-0.020	0.022		0.022		-0.015		
	(0.020)		(0.022)		(0.021)	(0.021)		(0.021)		(0.021)		(0.021)
Distance to nearest flagship campus (100 miles)	-0.041	**	-0.048	**	-0.061	**	-0.041	**	-0.048	**	-0.064	**
	(0.006)		(0.006)		(0.006)		(0.006)		(0.006)		(0.006)	
Post x Distance to nearest flagship (100 miles)	-0.017	**	-0.025	**	-0.021	**	-0.035	**	-0.042	**	-0.034	**
	(0.006)		(0.005)		(0.005)		(0.006)		(0.006)		(0.005)	
Distance to nearest other public campus (100 miles)	0.089	**	0.092	**	0.108	**	0.084	**	0.085	**	0.098	**
	(0.031)		(0.031)		(0.032)		(0.031)		(0.032)		(0.033)	
Post x Distance to nearest other public (100 miles)	-0.050		-0.022		-0.019		-0.047		-0.002		0.018	
	(0.032)		(0.033)		(0.031)		(0.032)		(0.031)		(0.030)	
Percent Urban	-0.048	+	-0.018		0.006		-0.064	*	-0.031		0.001	
	(0.025)		(0.025)		(0.026)		(0.025)		(0.025)		(0.026)	
Post x Percent Urban	0.066	**	0.035		0.027		0.101	**	0.083	**	0.074	**
	(0.021)		(0.022)		(0.020)		(0.022)		(0.023)		(0.022)	
Percent Town	0.110	**	0.082	**	0.032		0.105	**	0.077	**	0.019	
	(0.029)		(0.029)		(0.031)		(0.028)		(0.029)		(0.031)	
Post x Percent Town	0.069	**	0.082	**	0.099	**	0.059	*	0.071	**	0.102	**
	(0.025)		(0.026)		(0.025)		(0.024)		(0.025)		(0.025)	
Percent Rural	0.060	*	0.072	**	0.047	+	0.041		0.050	+	0.015	
	(0.028)		(0.028)		(0.028)		(0.026)		(0.026)		(0.027)	
Post x Percent Rural	0.085	**	0.067	**	0.083	**	0.085	**	0.077	**	0.105	**
	(0.023)		(0.024)		(0.023)		(0.023)		(0.024)		(0.023)	
Adjusted R ²	0.41		0.36		0.32		0.38		0.32		0.28	
<i>Controls:</i>												
High School Demographics ^a	X		X		X		X		X		X	
Targeted Recruitment High Schools ^b	X		X		X		X		X		X	
High School SAT Performance ^c	X		X		X		X		X		X	
Number of Observations (school-by-year)	11,921		11,921		11,921		29,028		29,028		29,028	

Notes: Standard errors are shown in parentheses and are clustered at the high school level. Pre-policy years are 1996 and 1997. Post-policy years are 1998-2016. Flagship campuses are the University of Texas at Austin (UT) and Texas A&M University at College Station (TAMU). Percent suburban is the omitted category in all regressions. a. High school demographics are time-varying school characteristics: ethnic and racial composition of the student body (percent Hispanic, black, Asian, and white (omitted category) students); percent free/reduced lunch eligible students; and total number of students enrolled in grade 12. b. Targeted recruitment high schools are schools who were ever designated as a Longhorn school (UT fellowship program) or Century school (TAMU fellowship program). c. High School SAT Performance are quartile indicator variables of the mean SAT score for test takers among Texas high schools in 1996. To account for a statewide shift in demographics, we also include in all regressions a control for the average percentage of non-white students in high schools across the state. ** p<0.01, * p<0.05, + p<0.10.

Sources: Administrative enrollment data comes from the University of Texas at Austin (UT) and Texas A&M University at College Station (TAMU), 1996-2016. High school variables are lagged by one year and were obtained from the National Center for Education Statistics's (NCES) Common Core of Data (CCD), 1995-2015. The mean high school SAT variable was obtained from the College Board and is based on all Texas students who took the SAT in 1996.

**Figure A1: Change in Sending Patterns among
Never-Sending High Schools to the University of Texas at Austin, 1998-2016**



**Figure A2: Change in Sending Patterns among
Never-Sending High Schools to Texas A&M University at College Station, 1998-2016**

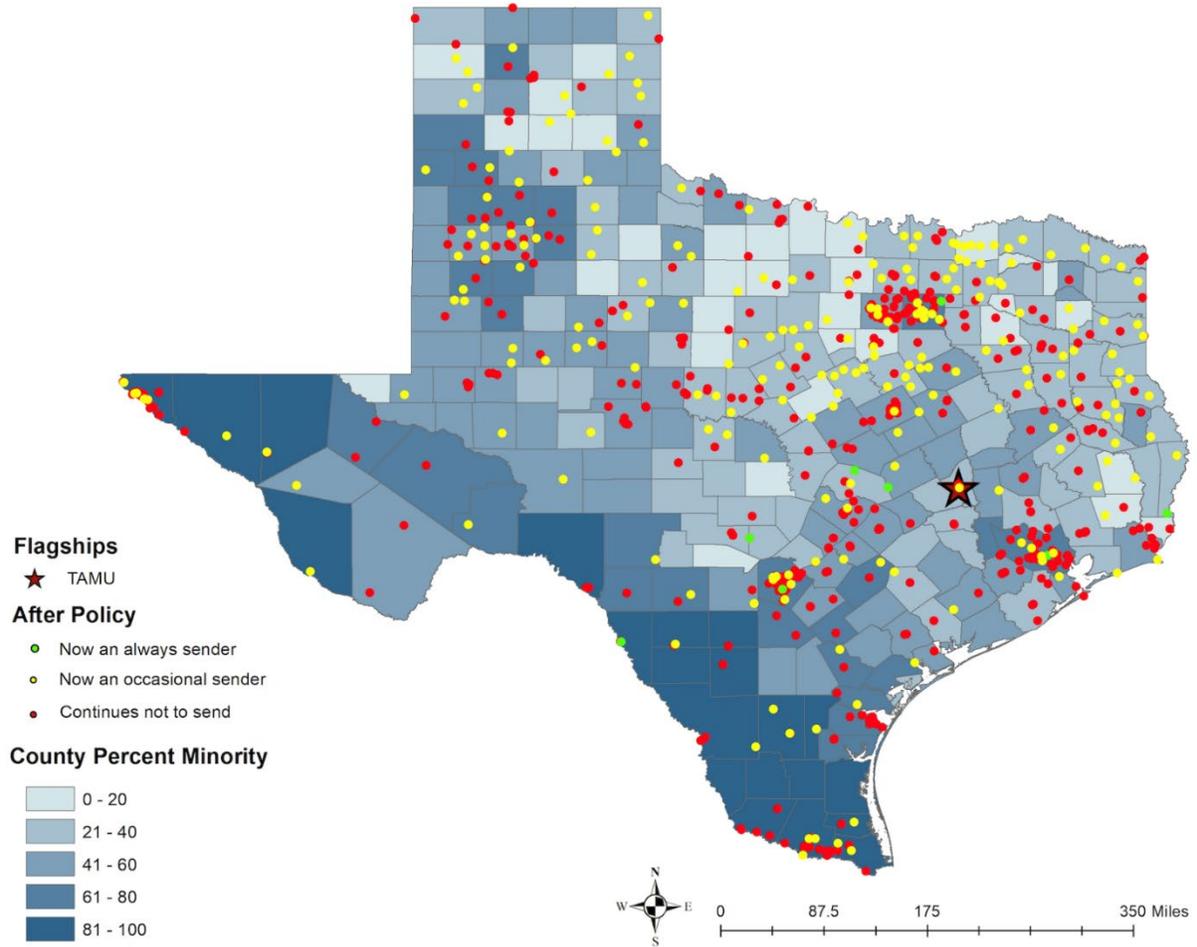


Table A1: Pre-Policy Characteristics of Texas Public High Schools
by Enrollment Patterns to the Flagship Campuses Two Years Prior to the Enactment of the Top 10% Plan

	Panel A: High School Enrollment Patterns to UT			Panel B: High School Enrollment Patterns to TAMU		
	(1) Always Senders	(2) Occasional Senders	(3) Never Senders	(1) Always Senders	(2) Occasional Senders	(3) Never Senders
Number of High Schools	421	227	1,038	590	283	813
<i>Flagship Campus Enrollment:</i>						
Number Students Enrolled in UT	12.04 (18.06)	0.90 (2.14)	- (-)	8.51 (16.19)	0.69 (2.38)	0.08 (0.73)
Number Students Enrolled in TAMU	10.65 (11.70)	1.87 (2.24)	0.39 (1.01)	8.48 (10.50)	0.95 (1.41)	- (-)
Percent Seniors Enrolled in UT	3.45 (3.59)	1.21 (1.88)	- (-)	2.40 (3.34)	0.73 (1.73)	0.14 (0.89)
Percent Seniors Enrolled in TAMU	3.29 (2.56)	2.28 (2.93)	0.90 (2.54)	3.62 (2.68)	2.13 (3.74)	- (-)
<i>High School Demographic Characteristics:</i>						
Percent Black	12.32 (15.30)	10.43 (16.39)	12.68 (19.30)	11.99 (15.65)	11.04 (16.43)	12.98 (19.01)
Percent Hispanic	30.45 (28.58)	30.80 (30.72)	31.41 (29.95)	27.83 (27.16)	27.26 (28.95)	35.27 (31.44)
Percent Asian	2.57 (4.04)	0.64 (2.11)	0.52 (1.64)	1.63 (3.59)	0.69 (2.24)	0.53 (1.67)
Percent White	54.41 (27.88)	57.91 (30.78)	55.11 (31.78)	58.02 (27.70)	60.79 (30.41)	50.90 (32.45)
Percent Free Lunch Eligible	23.82 (17.93)	30.96 (19.34)	33.21 (22.83)	24.43 (16.60)	32.43 (18.42)	34.54 (24.91)
Grade 12 Enrollment	308.40 (176.87)	104.01 (84.05)	36.96 (59.05)	243.39 (180.73)	82.42 (96.50)	29.72 (58.31)
<i>Targeted Recruitment High Schools:</i>						
Century High School (percent)	11.76	6.21	2.63	10.00	6.41	1.55
Longhorn High School (percent)	6.89	6.21	1.18	3.90	5.87	2.05
<i>High School SAT Performance:</i>						
Mean High School SAT (Q1 - top)	30.17	19.96	10.78	26.69	20.64	8.06
Mean High School SAT (Q2)	32.42	20.62	9.17	28.14	22.24	5.65
Mean High School SAT (Q3)	22.33	31.04	11.48	26.86	21.00	7.56
Mean High School SAT (Q4 - bottom)	12.47	24.83	17.17	15.42	27.40	14.20
No High School SAT takers	2.61	3.55	51.36	2.88	8.72	64.52
<i>High School Location Characteristics:</i>						
Percent Urban	36.58	16.19	25.48	27.12	14.77	32.01
Percent Suburb	26.13	6.65	8.37	16.98	4.80	10.95
Percent Town	21.62	25.28	15.67	25.76	13.88	14.56
Percent Rural	15.68	51.88	50.48	28.14	66.55	42.47
<i>College Proximity:</i>						
Nearest public flagship campus (100 miles)	1.49 (1.10)	1.67 (1.08)	2.01 (1.44)	1.46 (1.03)	1.88 (1.15)	2.08 (1.55)
Nearest other (non-flagship) public campus (100 miles)	0.24 (0.20)	0.37 (0.25)	0.35 (0.28)	0.29 (0.23)	0.37 (0.24)	0.34 (0.29)
Distance to UT (100 miles)	1.75 (1.05)	0.90 (2.14)	2.27 (1.37)	1.77 (0.97)	2.11 (1.06)	2.12 (1.19)
Distance to TAMU (100 miles)	1.74 (1.20)	1.95 (1.20)	2.16 (1.35)	1.73 (1.13)	2.15 (1.27)	2.42 (1.73)
Number of Observations (school-by-year)	842	451	1,864	1,180	532	1,415

Notes: Standard deviations for non-binary variables are shown in parentheses. Pre-policy years are 1996 and 1997. Flagship campuses are the University of Texas at Austin (UT) and Texas A&M University at College Station (TAMU). *Always Senders* are high schools who have always sent students to either flagship campus in both of the pre-policy years. *Occasional Senders* are high schools who have occasionally sent students to either flagship campus in either of the pre-policy years. *Never Senders* are high schools who have never sent a single students to either flagship campus in either of the pre-policy years.

Sources: Administrative enrollment data were obtained from the University of Texas at Austin (UT) and Texas A&M University at College Station (TAMU), 1996 and 1997. High school variables are lagged by one year and were obtained from the National Center for Education Statistics (NCES), Common Core of Data (CCD), 1995 and 1996. The mean high school SAT variable was obtained from the College Board and is based on all Texas students who took the SAT in 1996.