Foreign Students and Domestic Minorities: Compliments or Competitors?[1]

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Submission for Population Association of America Annual Conference
Detroit, Michigan
April 30-May 2, 2009

[1] The author gratefully acknowledges support for this research from the National Science Foundation (Graduate Research Fellowship to Jayanti Johanna Owens), the Office of Population Research and the Department of Sociology at Princeton University. The author would also like to thank Marta Tienda, Office of Population Research, Princeton University, for her support in the writing of this paper. Data used for this study are restricted-access and therefore are not available from the author. Please direct any correspondence to Jayanti Owens, Office of Population Research, Princeton University, Wallace Hall (2nd Floor), Princeton, NJ 08544.

Abstract

Objective: Foreign students represent the newest frontier for universities seeking to diversify their undergraduate student body, but we know very little about foreign student admissions, particularly in relation to admission practices for domestic minority applicants. This paper examines the numbers, selectivity, and odds of admission of undergraduate foreign students relative to domestic applicants of various racial/ethnic groups. *Data and Methods:* Using administrative data from admissions applications, the data analyzed in this paper are a census of all applicants to four public and private Texas universities between 1990-2004 (albeit exact years of data coverage vary by institution). The paper uses logistic regressions with a rich set of controls for past academic achievement and demographic characteristics to model the selectivity regimes and odds of admission of foreign students relative to domestic applicants of different ethnic groups. The second part of the paper draws on analysis of the proposed majors of foreign applicants to examine the commonly-held belief that foreign applicants proposing science and engineering majors are favored in admissions. *Findings:* At the two most selective schools in the sample, UT-Austin and Rice, foreign applicants are less likely to gain admission over time due to increasing selectivity in admissions. Over the same period, the less-selective universities, Texas A&M and Texas Tech, experience an increase in their foreign student acceptance rates. The odds of admission for foreign applicants are on par with those for domestic minority applicants and higher than the odds for white applicants. The reasoning behind the relatively high acceptance odds of foreign students at the less-selective institutions is that these universities have not reached their caps on foreign enrollment. Findings indicate that foreign applicants proposing majors in fine arts, social sciences and other non-engineering and science fields have higher odds of admission across institutions relative to the odds of humanities majors, thus debunking the myth that foreign undergraduates in S&E fields are favored in admissions processes.

Introduction

There has been extensive research done in the area of college admission for minority students, including work on how universities craft a diverse entering class (Stevens 2007; Alon and Tienda 2007; Espenshade and Chung 2005; Espenshade, Hale, Chung 2005; Massey, Charles, Lundy, Fischer 2003; Tienda et. Al. 2003; Tienda and Simonelli 2001; Bok and Bowen 1998). Little research has been done, however, on foreign students, who represent a new frontier in the diversification processes of American universities. Foreign students who come to the United States to attend college place further demand on the already-limited number of spots at American universities. Despite the fact that all qualified Americans who apply to four-year public universities are not admitted, universities continue to seek foreign students. One possible rationale for admitting foreign students is that most are full-fee paying (receiving no financial aid on the sticker price cost of tuition[2]) and therefore increase a university's revenue (Golden 2002). Another is that being able to attract foreign students indicates a university's own high institutional status (Golden 2002).

The high demand for a postsecondary education among American students is partly the result of the children of the baby boom generation entering college. Students of the baby boom echo have been entering college over the past decade and will continue to do so through the next (U.S. Department of Education 2000). This large generational cohort is moving into adulthood at the same time as a college degree is more necessary than ever. A college degree is associated with obtaining a secure, non-menial job in today's service and information economy (Haskins 2008). The children of baby boomers will continue to squeeze the enrollment capacities of public universities in

[2] In reality, we know all students at public and private universities, even those who are full-fee paying, are 'subsidized' in the sense that the cost for educating each students is higher than the full 'sticker price' that is advertised as the cost of tuition for one year. At private universities these subsidies come out of the university's endowment, where the majority of funds are privately raised (McPherson 200. At public universities, the majority of subsidy monies tend to come from taxpayer dollars (Kane 1995).

particular, where the majority of American students earn bachelor's degrees. This is especially the case as the cost of a private college education increases significantly faster than inflation and families see public universities as the most affordable way to earn a bachelor's degree (Dordai and Rizzo 2006). The result is that a 'demographic squeeze' in college admissions caused by high demand for spots at public universities.

The size of college-going cohorts of students is projected to peak in 2013 (National Center for Education Statistics 2006), after which point a smaller generation of students will be coming into the traditional college ages (Western Institute Commission on Higher Education 2008). The confluence of large cohorts of college-going students, increasing labor market demand for college-educated workers, and the soaring costs of a college education produces what I refer to as the 'college squeeze' taking place across the majority of the United States.

In an environment in which graduating high school cohorts are increasing in size and at a time when the desire for a college education in order to secure a job in an information and service-based economy is greater than ever, one would expect the number of foreign students admitted to public universities to decrease over time. Additionally, one would expect a heightened selectivity regime among foreign applicants competing for a shrinking number of admissions slots.

College Admissions in Texas

The college squeeze is particularly prominent in Southern states of the U.S. (Western Interstate Commission on Higher Education 2008). In Texas in particular, cohorts of high school graduates are growing exponentially (Western Interstate Commission on Higher Education 2008). The supply of spots at Texas universities is not increasing at the same pace. A report by the Western Interstate Commission on Higher Education reports: "It is unclear whether Texas will experience a peak [in their numbers of high school graduates each year] at all; rather, [Texas] may undergo a

consistent expansion in high school graduate numbers, with a single year or two during which the growth pattern is momentarily interrupted. In fact, [Texas], which is also the largest in the South, account[s] for the vast bulk of the regional expansion [in the South]. Between 2004-05 and 2021-22, public graduates are projected to climb by over 96,000 in Texas (a 40.1 percent rise)" (Western Interstate Commission on Higher Education 2008: 22). Texas also has one of the fastest growing numbers of secondary school students in the United States.

That Texas public universities are highly committed to educating their own residents first and foremost further points to an even more limited number of spots for non-Texan applicants (Richardson 1997). Among college-going students in Texas, the majority attend Texas' three largest flagship universities (Western Interstate Commission on Higher Education 2008). By 2005, seven years after the Top 10% Law, fully 50 percent of students enrolling in the UT system were admitted through the Top 10 Percent policy (Powers 2006). The admissions regime at public universities in Texas is one that prioritizes educating Texans by placing a cap on the numbers of students that can be admitted from outside Texas and the U.S. (Richardson 1997). These caps lead to a heightened selectivity regime among all out-of-state (including foreign) applicants compared to that in place for in-state applicants. Then, with the passage of the Top 10% Law (H.B. 588) in 1998 guaranteeing admission to one of Texas' public four-year universities for all students graduating in the top ten percent of their high school class, spots for non-Texan applicants became even more limited (Tienda and Niu 2006).

Research Questions and Hypotheses

The confluence of large graduating high school cohorts in Texas, the passage of the Top 10% Law, a heightened demand for a college education in today's labor market, and Texas' emphasis on educating its own residents, one would expect a decreasing number of foreign students enrolling

at Texas' largest public institutions over time. One would also expect to see a heightened selectivity regime operating in foreign undergraduate admissions at flagship public, and to some extent, at private universities in Texas. Part of the targeted admission of the most highly-qualified foreign students may mean that students in highly-technical fields such as the sciences and engineering are most likely to be admitted. Finally, the appeal of attracting foreign students, on the one hand, and institutions' commitments to creating higher education opportunity for domestic minority students, on the other, begs the question of how universities prioritize the allocation of their admissions spots between these different types of students, particularly those who contribute to the 'diversity' or other institutional missions of the university. The research questions explored in this paper, then, are four-fold:

1) Are the numbers of foreign students at Texas' largest public universities and its most-selective private university decreasing over time?
2) Are the foreign students admitted to Texas' most selective public and private universities becoming increasingly selective over time?
3) Are the chances of being admitted higher for foreign students in technical fields that are in high-demand, such as the sciences and engineering?
4) How to foreign students chances of being admitted compare to those of domestic minority applicants?

Although private universities, like Rice, are not bound by the Top 10 Percent Law, they are obliged to abide by the ban on race- or ethnic- preferences in college admissions, such as that enacted as a result of *Hopwood v. University of Texas* (5th Circuit, 1996). Given these factors, Texas universities reflect a heightened selectivity regime for foreign students compared to other public institutions in the U.S., this study likely offers particularly conservative estimates of selectivity in undergraduate foreign student admissions.

As foreign students are increasingly incorporated into universities' definitions of 'diversity' and are being actively recruited by universities, cohort sizes of high school graduates in Texas are growing exponentially. Given Texas' commitment to educating the new generation of Texans, there is not only likely to be a 'college squeeze' due to greater demand for college spots than the numbers of spots available, but also a heightened selectivity regime among admitted students over time. However, Texas universities, like all four-year institutions across the country, are also likely to want to nurture future flows of foreign students. The myriad reasons for the appeal of foreign students include the facts that foreign students bring revenue, diversity, give American universities an edge in staying ahead of international competition, and can help fill spots as cohorts of American high school graduates eventually shrink after the passage of the children of the baby boomers through college. As a result, it is likely that Texas' universities will continue to negotiate these interests of educating Texans and also maintaining, if not raising, their enrollments of foreign students.

Data and Methods

This study uses restricted-access administrative panel data containing individual-level data from admissions records submitted by all applicants to Texas universities between 1990 and 2004 (with years of data coverage ranging slightly for each institution). Data was collected through the Texas Higher Education Opportunity Project (THEOP). The sub-sample of data analyzed in this study consists of all foreign and domestic applicants who applied to any of four Texas universities over the specified period. The four institutions include Texas' two major public flagship institutions, UT-Austin (1990-2003) and Texas A&M University (1992-2002), one of Texas' less-selective public institution, Texas Tech (1991-2003), and one highly selective private institution (Rice University, 2000-2004) (*Barron's Profiles of American Colleges* 2007). In all, the data analyzed consist of 224,893 applicants to UT-Austin, 163,027 applicants to Texas A&M, 105,376 applicants to Texas Tech, and

36,190 applicants to Rice over the periods specified above for each university. Of these applicants, foreign applicants comprise 13,340 observations UT-Austin, 3,256 at Texas A&M, 1,553 at Texas Tech, and 1,833 at Rice.

Methods of analysis include descriptive tabulations, means analysis, and non-linear regressions reported as odds ratios in order to predict how foreign students' odds of admission change based on SAT score, field of study, and over time. Specifically, analysis is divided into three sections. The first section is descriptive, looking at overall trends over time in the numbers of acceptances and acceptance rates for foreign applicants by institution. The second part is a restricted analysis of foreign students, examining their changing odds of admission over time based on whether or not they have a 'high' GPA (above 1300). The third part of the paper analyzes the full sample of applicants at each university to consider foreign students' odds of admission, net of controls, over time. Within the full-sample analysis, the first set of models predicts how students' odds of admission by foreign status and domestic-applicants' ethnic sub-group changes over time (net of controls). The second set of models within the full-sample analysis examines how foreign students' proposed field of study ('major') influences their odds of admission.

Because this project uses administrative data from applicant records, models reliably control for high school SAT scores as well as high school and family social class background characteristics (see Appendices B and C).

With a particularly large population of minorities in the state reflected particularly in the large numbers of Latinos enrolled at these two institutions, administrative data from four of Texas' universities enables rich analysis of differences in chances of acceptance between foreign students and domestic minority students relative to White applicants. Texas' Top 10 Percent policy will likely lead the way for many other states that will need to find alternatives to race-based admissions policies to ensure 'diversity' among their undergraduates. Ultimately, Texas is a prime location for

beginning multi-institutional analysis of changes in and characteristics of the undergraduate foreign student body in the United States.

Texas is the second most populous state and has the third largest public university system in the country (National Center for Education Statistics 2006). The University of Texas-Austin (UT-Austin) and Texas A&M, Texas' two major public flagships, rank among the top-ten in terms of their enrollments of foreign graduate students (McCormack 2007). At the undergraduate level, however, UT-Austin, Texas A&M, and Texas Tech are big, well-known and selective but not highly-selective four-year public institutions. UT-Austin was founded in 1883 and has a total student body of approximately 50,000 students (36,000 undergraduate students and 14,000 graduates). Texas A&M was founded slightly earlier, in 1876, and has approximately 46,000 students (37,500 undergraduates and 8,500 graduates). Texas Tech, the youngest of the three big flagship public institutions in Texas, was founded in 1923 and is just over half the size of UT-Austin, with approximately 28,000 students (23,000 undergraduates, 5,000 graduates). As a small, private, highly-selective university with approximately 5,000 students (3,000 undergraduates and 2,000 graduates), Rice was founded in 1912.

Table 1 shows the ethnic/foreign status composition of undergraduate students the four Texas universities in the sample.

[Table 1 about here.]

In terms of racial/ethnic breakdown of domestic students at these four universities, there is a sharp break in the percent of white students enrolled at UT-Austin and Rice, on the one hand, and Texas A&M and Texas Tech, on the other. Whereas the former enroll 35-45% students of color, the latter enroll only 15-20% students of color.

Foreign students comprise between 0.5 and 3 percent of total undergraduate enrollments, on average, over the periods for which data are available at each institution. Figure 1 shows the enrollment of foreign students at each institution over time.

[Figure 1 about here.]

The numbers of enrolled foreign students in each entering class range from as few as 36 (in 1992) to as many as 116 (in 2000) at UT-Austin, from 38 (1995) to 80 (1993) at Texas A&M, from 8 (1997) to 28 (2003) at Texas Tech, and from 13 (2000) to 21 (2004) at Rice. As Table 2 shows, UT-Austin, as the most selective of the public institutions, has the most significant increases in their foreign student enrollments. Texas A&M, as the least selective institution in the sample, has an overall downward trend in the numbers of enrolled foreign students—likely as a result of the college squeeze in enrollments spots for domestic students, particularly after the passage of the Top 10 Percent Law. For the entering class in 2000, UT-Austin's enrolled foreign student body was 2.5 times bigger than that of Texas A&M, and roughly 6 times bigger than both Texas Tech and Rice.

[Table 2 about here.]

Table 2 also shows that, although foreign students comprise a small proportion of total enrollment, because Texas' large, public institutions enroll thousands of foreign students over the period for which data is available at each institution. It is important to note, however, that Texas Tech enrolls half as many students as UT-Austin while Rice enrolls only one-tenth as many students as UT-Austin. Given this, Rice enrolls a disproportionately large share of foreign students among its student body compared to UT-Austin, A&M, and Texas Tech. This fact is also apparent from Table 2.

Findings and Discussion

Descriptive statistics provide strong indication of an increasingly selective admissions regime for foreign students over time, whereby a smaller proportion of applicants are admitted. At the same

time, the extent of selectivity varies by institution. The overall heightened selectivity between institutions is particularly driven by the ability of UT-Austin and Rice universities, as the most selective institutions in the sample, to attract rapidly increasing numbers of foreign applicants but admit a decreasing share of them.

[Figure 2 about here.]

Figure 2 clearly points to a sharp increase in foreign applicants at the two most selective universities in the sample, UT-Austin and Rice, but particularly at UT-Austin after the year 2000. The two less-selective institutions in the sample, Texas A&M and Texas Tech, experience a much smaller increase in their numbers of foreign applicants. The numbers of foreign applicants to UT-Austin, in particular, almost doubled between 1990 and 2000 (from 638 to 1279 and more than fully doubled by 2003—1402 foreign applicants). While the acceptance rate was at its all-time high of 34% and 30% in 1996 and 1997, respectively, the acceptance rate was actually at its all-time *low* of 19% just two years *later*, in 1999. It is no coincidence that the admissions process in the intervening year, 1998, was also the year that the Top 10 Percent Law was first fully implemented. By guaranteeing admission to all Texas residents graduating in the top 10 percent of their high school class, UT-Austin experienced an enrollment squeeze which led to a limited number of open slots for foreign students, and thus a significantly lower acceptance rate. Nevertheless, the numbers of applicants steadily increased between 1990 and 2003, even after the Top 10 Percent Law was implemented and the squeeze on enrollment spots made admission even more difficult for foreign applicants.

Figure 3 shows that the *acceptance rate* for foreign students over time is inverse to the trend in the numbers of foreign applicants at each of the institutions.

[Figure 3 about here.]

UT-Austin and Rice experience a decrease in their acceptance rate for foreign students over the period during which the numbers of foreign applicants takes off. Texas A&M and Texas Tech, on

the other hand, show a dramatic increase in their acceptance rates--while their numbers of foreign applicants essentially stagnate over the same period. Noticeably, Texas A&M and Texas Techs' acceptance rates for foreign students increase significantly starting in the mid-to-late 1990s, which is approximately the same time that UT-Austin's numbers of foreign applicants skyrockets.

It is not surprising that these two salient changes occur within the same small time period. During the mid-1990s, senior administrators at flagship public universities around the country, including UT-Austin, began publically recognizing that attracting foreign students indicated a university had achieved a prominent reputation as a leading educational institution. For example, in April of 1996, Dr. Gregory Walters, Vice President for Institutional Advancement at Montclair State University in New Jersey reported to the *New York Times* that "As a public university, our primary goal is to provide an excellent education for New Jersey residents. Most out-of-state and international students come here because they have heard of our reputation for offering a fine education at an affordable price, and they contribute to New Jersey's economy during their stay with us" (Walters 1996). By 2005, statements by university leaders, such as that of Dr. Walters, no longer solely focused on the status-signal associated with a university's ability to attract foreign students. Rather, statements began highlighting the sheer competition between institutions at an international level on the front of attracting foreign students. At the University of Southern California, which boasts the highest enrollment of foreign students at any American university (enrolling 6,647 foreign students in 2004), President Steven B. Sample said in an interview with the *Houston Chronide*: "We compete no holds barred among ourselves for the best faculty, for students, for gifts and for grants, and that's one of the reasons for our strength. Now we'll compete with some overseas universities [for international students]. Fine with me, bring 'em on" (Dillon 2004). Given the level of competition that was on the rise during the same period as UT-Austin experienced a 120% increase in its numbers of foreign applicants (between 1990-2003), it is no surprise that the less-prominent

and less-selective public institutions of Texas A&M and Texas Tech began accepting a larger percentage of its foreign applicants in order to follow the suit of UT-Austin and other large state schools in being able to claim an appeal for foreign students.

The decrease in the acceptance rate at UT-Austin amidst an exponential increase in the numbers of foreign applicants is the result of UT-Austin having reached its cap on the number of foreign students it can admit in accordance with its obligations to Texas residents as a publically-funded institution. While analogous caps also apply to Texas A&M and Texas Tech, Texas A&M and Texas Tech are less appealing to foreign applicants because they are roughly half the size of UT-Austin, less-selective, and less able to cater through their specialties to the types of training in demand among foreign applicants. For example, whereas UT-Austin offers a petroleum engineering division that is in high-demand among foreign students, Texas A&M has a strong agricultural tradition that is much less in demand among foreign students. Largely as a result, Texas A&M and Texas Tech have not yet reached their caps on the number of foreign applicants they can admit. As they experienced only slight increases in their numbers of foreign applicants during and after 2000, their acceptance rates were able to increase noticeably without reaching their maximum permitted numbers of admitted foreign students.

With strong indications of a heightened selectivity regime in foreign admissions at the two most selective schools in the sample, UT-Austin and Rice, accompanied by an increase in the acceptance rate of foreign students at the lesser-selective Texas A&M and Texas Tech over the same period, it is clear that foreign students are a desired group in higher education. The reason for these institutions' pursuit of foreign students, and the '*best*' (as in most-selected) foreign students where possible, is closely intertwined with institutions' desire to increase their institutional status, signaling to future applicants and the rest of the higher education community that their education is of distinctively high quality and their institution has something special to offer. The way in which

institutions go about admitting foreign students in order to portray a high-status image by increasing institutional 'diversity' is explored in parts two and three of the analysis in this paper.

Changing Selectivity in Foreign Admissions

Table 3 shows differences in mean cumulative SAT scores of foreign and domestic applicants, by institution. Foreign students' mean scores are further disaggregated based on whether or not they were offered admission.

[Table 3 about here.]

T-tests of significance between accepted and rejected foreign students highlight that accepted foreign applicants had, on average, significantly higher cumulative SAT scores than those who were rejected at each institution. This fact reinforces that there is increased selectivity among accepted foreign applicants. Notably, whereas the mean SAT score of rejected foreign applicants consistently falls below the mean SAT score of domestic applicants on the whole, mean SAT scores of accepted foreign applicants consistently fall above the mean of domestic applicants. This trend points to an implicit assumption underlying foreign student admissions at each institution—foreign applicants must be above average in the overall applicant pool in order to gain admission. Part of this is likely due to the reality that American universities' function is to educate *Amerian* students in an environment that best prepares them to be future leaders. The argument behind admitting foreign students at all is that these students enhance the education of all students through the unique perspectives they bring to campus. The other argument is that foreign students contribute significantly to certain fields of research and development through their high academic achievement and specialized training in a given field. Although this is especially true at the graduate level, admitting foreign undergraduates creates a clear pipeline for future graduate study.

The finding of increased selectivity among foreign applicants is further reinforced in Table 4, which shows the odds of admissions over time for a restricted sample of all foreign applicants and for the specific subgroup of foreign applicants with 'high' SAT scores (defined as having a cumulative SAT score above 1300). The year x SAT above 1300 interaction terms in each of the models in the second part of Table 4 present an examination of whether having a high SAT score differentially increases foreign applicants' odds of admission over time. Controls for family social class and student high school performance are included in the second of the two models for each university.

[Table 4 about here.]

At UT-Austin in particular, foreign applicants are less likely to gain admission over time due to increased selectivity in admissions. By 2003, foreign applicants are 82% *less* likely than foreign applicants in 1990 to gain admission to UT-Austin, even when controlling for high school achievement, family's social class, father's education, and family income in the prior year to application. Increased selectivity is the result of an increasing number of foreign applicants in combination with UT-Austin having reached its cap on foreign admits, thus leading to a smaller fraction of applicants being admitted over time.

Significant year x high-SAT score interaction terms[3] indicate that high-SAT score foreign applicants are more likely to gain admission at certain points in time, relative to foreign applicants with high SAT scores in 1990. Both with and without controlling for family's social class and student

[3] To identify significance of interaction terms from odds ratios, odds corresponding to coefficients *not* included in the equation for the reference category must be added and t-tests for significance from zero must be run. The equation for the reference category simply contains the coefficient on the 'SAT score above 1300' main effect (since 1990 and 1990 x SAT above 1300 are the reference in each of the sub-effect categories). The *direction* of the effect is determined by multiplying the values of the coefficients identified in the equation for the comparison group. For example, to test whether foreign applicants with SAT scores above 1300 in 1991 have significantly different odds of admission relative to foreign applicants with SAT scores above 1300 in 1990, a t-test for the sum of the coefficients on 1991+(1991 x SAT above 1300)=0 is run. The 'SAT above 1300' main effect is not included in the t-test because it is included in the right-hand side of the equation for the reference category (odds of admission for foreign students with SAT scores above 1300 for 1990) as well as in the right-hand side of the equation for the year for which odds are being considered.

high school performance, foreign students with high SAT scores (above 1300) were significantly more likely to be admitted to UT-Austin in 1996 and 1997 and then again in 2002 and 2003, compared to their odds of admission in 1990.[4] A likely explanation for the trend in increased odds of admission for foreign students with high SAT scores after 1995 is that heightened selectivity set in as the numbers of foreign applicants to UT-Austin began to increase, leading to an overall decrease in the acceptance rate.

Noticeably, however, the overall trend of increased odds of admission to UT-Austin for more competitive applicants—as evidenced by an increase in mean SAT among admitted foreign applicants to scores above 1300—was interrupted between 1998 and 2001. During this period, foreign applicants with SAT scores above 1300 were not significantly more likely than high-SAT applicants in 1990 to be admitted. This interruption can be largely explained by considering two phenomena. First, the mean SAT score of foreign applicants steadily increases during this period such that having an SAT score above 1300 no longer serves as sufficient criteria to separate the most qualified applicants from the rest of the applicant pool. The second phenomena is the implementation of the Top 10 Percent Law, which led to noticeable decreases in the numbers of foreign applicants who were admitted due to the 'college squeeze' due to increased demand from domestic applicants who were guaranteed admission. Whereas 260 applicants were admitted to enroll in the fall of 1996, only 213 and 214 applicants were accepted to enroll in 1998 and 1999. The trend of increasing selectivity in UT-Austin's foreign admissions was likely self-perpetuating. As foreign applicants began to increase in number, UT-Austin's reputation among international applicants likewise increased, reflecting UT-Austin's overall heightened status both on the

[4] Y(admit 1990 if high SAT)=b_1 (SAT above 1300); Y(admit 1997 if high SAT)=b_1 (SAT above 1300) + b_2 (1997) + b_3 (1997 x SAT above 1300). T-test: $b_2+b_3=0$. T-Statistic=18.36; p-value=0.0000. The same equations apply to testing significance for each year and for each institution. Austin: 1996: T-statistic=2.66; p-value=.1000. 2002: T-statistic: 3.44; p-value: 0.064. 2003: T-statistic: 13.36; p-value: 0.0004.

international landscape among future foreign applicants and within the U.S. as its reputation as an institution attractive to foreign applicants took firm hold.

The trend of increased selectivity does not seem to hold at the less-selective public institutions. At Texas A&M, for example, it was not until 2002 that the odds of admission for foreign applicants decreased significantly relative to the odds of admission in 1992. By 2002, however, foreign students had become 44% less likely to gain admission than they were a decade earlier. This effect holds even when controlling for students' high school achievement and a proxy for social class, which measures the percent of students at the applicant's high school who were from economically disadvantaged backgrounds.[5] None of the coefficients on the 'year x SAT above 1300' interaction terms are significantly different from 1992 x SAT above 1300, the reference category. This indicates that the odds of admission for foreign applicants with high SAT scores do not change significantly between 1992 and 2002.

At Texas Tech, without controlling for students' family class background and high school achievement, significant coefficients make it seem as though it became much harder to gain admission beginning in 1996 than it had been in 1991. However, the fact that the coefficients on each year are no longer significant when controlling for family social class and student high school achievement indicates that much of the variation in the odds of admission over time are absorbed by students' differing socio-economic and academic performance backgrounds. As is the case at Texas A&M, none of the year x SAT above 1300 interaction terms are significantly different from 1991 x

[5] Data on family income was not available for Texas A&M. However, Massey and Denton (1993) show there is high correlation between family social class and the percent of economically disadvantaged students at one's high school due to high levels of class and race-based segregation. This proxy is used from Texas Education Administration's records for foreign applicants who attended high school in the U.S. (approximately half of all foreign applicants). A separate control is included in the model to account for foreign students who did not attend a Texas high school and therefore do not have a control for social class (see Appendix C).

SAT above 1300, the reference category. This indicates that the odds of admission for foreign applicants with high SAT scores do not change significantly between 1991 and 2003.

Overall, the lack of significant changes in the odds of admission over time for foreign applicants with high SAT scores to Texas A&M and Texas Tech highlights that these two public institutions, although less selective universities for foreign applicants, continue to seek foreign students. During the same period that UT-Austin reached its cap on foreign admits and was becoming increasingly selective in its admissions process, Texas A&M and Texas Tech were admitting an increasing share of all foreign applicants. Even though foreign admits at Texas A&M and Texas Tech had lower mean SAT scores than those at UT-Austin and Rice, Texas A&M and Texas Tech recognized that admitting foreign students signaled to prospective domestic and foreign applicants that they had reached a level of institutional status that is signaled by a university's ability to attract foreign students.

Rice University is a unique counterpoint to the three public institutions because, as a private institution primarily funded through tuition and its own privately invested endowment, it is not restricted in the numbers of foreign students it can admit. Rice has had high enrollments of foreign students over the entire period for which we have data—and has had a highly selective admissions process for foreign students throughout the entire period. The particularly high selectivity among foreign students is highlighted by Rice's low acceptance rates (only 12% of foreign applicants are admitted, on average between 2000-2004, for example, compared to 24% of domestic applicants) and high mean SAT scores (admitted foreign students averaged 1394 on the SAT compared to 1360 among domestic applicants between 2000-2004) not only for admitted foreign students, but also among all foreign applicants. As a result of its high selectivity over the entire period 2000-2004, there is insignificant variation in the odds of admission over this period, even for foreign applicants with SAT scores above 1300.

Analysis to this point has focused on examination of the restricted sample of foreign applicants to each institution, but how selective is foreign admissions in the context of the overall university admissions process? Table 5 presents analysis of the changing odds of admission over time for foreign applicants in comparison to other domestic applicants by race, controlling for students' past high school performance, proposed major, and the family's social class (control variables detailed in Appendix C).

[Table 5 about here.]

At UT-Austin between 1990 and 2003, on average, foreign students' odds of admission were 51% higher than those for White applicants, even controlling for students' high school performance, proposed major, and their social class. Foreign students' odds of admission were on par with the odds of admission of domestic Black and domestic Hispanic applicants, which were 69% and 57% higher than those of White applicants, respectively. Over time, however, the odds of admission for foreign applicants decreased significantly relative to what their odds had been in 1990. By 2003, foreign applicants were 87% *less* likely to gain admission than they had been in 1990.[6]

Over roughly the same period during which gaining admission to UT-Austin was becoming increasingly difficult for both domestic and foreign applicants, attracting foreign students became a salient priority for the less-selective public institutions, Texas A&M and Texas Tech, as well. At Texas A&M, foreign applicants were 86% more likely than White applicants to be admitted on average between 1992 and 2002—on par with the odds of admission for Black and Hispanic applicants who were over 100% and 75% more likely than Whites to be admitted, respectively.

[6] The same procedure described in footnote 2 is used here. The equations for the odds of admission for the reference and comparison groups are as follows: Reference: Y(admit if foreign applicant to enroll in 1990)=b_1 (Foreign); 2003 Comparison: Y(admit if foreign applicant to enroll in 2003)=b_1 (Foreign) + b_2 (2003) + b_3 (Foreign x 2003). T-test: $b_2+b_3=0$. T-Statistic=238.39; p-value=0.0000. The same equations apply to testing significance for each year and for each institution. The *direction* of the effect is determined by multiplying the values of the coefficients identified in the equation for the comparison group. In the case of the odds of admission for foreign applicants in 2003, odds of admission in 2003=.09*1.43=.1287. Foreign applicants are therefore 87% *less* likely to be admitted in 2003 than foreign applicants in 1990, controlling for high school achievement, proposed major, and family social class.

Between 1993 and 2000, the odds of admission to Texas A&M gradually increased for all applicants on the whole relative compared to their odds of admission in 1992. After 2000, however, these odds reversed such that it became significantly more difficult for applicants on the whole to be admitted than it had been in 1992. By 2002, applicants were 41% less likely, overall, to be admitted than they had been in 1992. The trend in the odds of admission for foreign applicants mirrored those for all applicants. After 2000, foreign applicants were significantly less likely to be admitted than they had been in 1992.[7] A large part of this increased selectivity can be explained by the increased numbers of foreign applicants, which meant that Texas A&M could be more selective in their admissions process while still increasing its numbers of admitted foreign students.

Certainly, as prior analysis shows, part of the reason foreign students may have had increased odds of admission is their overall higher SAT scores in comparison to domestic applicants. In this light, one could argue that universities acted rationally by increasing the odds of admission for highly qualified foreign applicants. On the other hand, it is critical to note that admitting foreign students is in no way tied to universities' desire to promote social equality, such as by admitting domestic underrepresented applicants. The increased odds of admission among foreign applicants in a wider analysis of all applicants presents compelling support that UT-Austin and Texas A&Ms' desire to admit foreign students is on par with their commitment to admitting underrepresented domestic minority students.

In contrast to UT-Austin and Texas A&M, where foreign students are, on average, *more* likely than Whites to be admitted, the decreased odds of admission among foreign applicants relative to White applicants at Texas Tech and Rice present interesting contrast. In the case of Texas Tech,

[7] 2001: T-statistic=5.52; p-value: 0.0188. 2002: T-statistic=14.66; p-value=0.001. Multiplying coefficients on the appropriate year and year x foreign terms leads to magnitude on the significant terms of 0.65 in 2001 and 0.50 in 2002. Foreign students were therefore 45% less likely to be admitted in 2001 and 50% less likely to be admitted in 2002 relative to their odds in 1992.

the university overwhelmingly enrolled White students between 1991 and 2003. Fully 85% of enrolled students are White—in contrast to 65% at UT-Austin and 55% at Rice. The odds of admission for Black, Hispanic, and Asian students are significantly lower than the odds of admission for White applicants to Texas Tech. At an institution with a long and contemporary history of enrolling a less racially diverse group of applicants than the other institutions, it is no surprise that foreign applicants are 80% less likely to gain admission than White applicants.

Examining the changes in admissions odds over time reveals that, among the overall pool of applicants seeking to enroll at Texas Tech in 1996, the odds of admission went from being significantly greater than they had been in 1991 to, in the course of one application season, becoming significantly *lower* than they had been in 1991. Among foreign applicants in particular, however, the odds of admission remained significantly lower than they had been in 1991 during almost the entire period for which we have data.[8] During the several years prior to 1996, the numbers of foreign applicants to Texas Tech were relatively low. Given the 'status signal' of foreign students, however, the university still sought to maintain a trend of increasing their enrollment of foreign students. As the number of applicants gradually increased, albeit slowly in comparison to UT-Austin in particular, the overall trend after 1994 is of significantly decreasing odds of admission among foreign applicants. The increasing selectivity is reflected in the overall decreased odds of admission for foreign applicants relative to White applicants. However, even with increased selectivity among foreign applicants, Texas Tech enrolled an increasing number of foreign students each year. By 2003, foreign enrollment at Texas Tech had increased by 75% (from 83 foreign students in 1991 to 228 foreign students in 2003).

[8] The *magnitude* of the significant effects (significant at the 1% level during all years except 1993, based on running t-tests of the same form described in footnote 2) is as follows: 1992: 13.86; 1993: 0.54; 1994: 16.11; 1995: .2085; 1996: 0.047; 1997: 0.071; 1998: 0.066; 1999: 0.029; 2000: 0.139; 2001: 0.403; 2002: 2.374; 2003: 0.178.

The story behind the decreased odds of admission for foreign applicants relative to White applicants at Rice University takes a different form that of Texas Tech. In sharp contrast to Texas Tech, Rice is an almost majority-minority university, with 45% students of color and 55% White students. In this context, the significantly lower odds of admission for foreign applicants relative to White applicants (foreign applicants are 35% less likely than Whites to be admitted) is the result of an extremely high level of selectivity among foreign applicants. Rice attracted a comparable or even larger number of foreign applicants than either Texas A&M or Texas Tech even though undergraduate enrollments at both of these public institutions are between seven and ten times that of the undergraduate enrollment at Rice. Furthermore, Texas A&M and Texas Techs' admission rate for foreign applicants is three to six times greater than that of Rice's, whereas UT-Austin's is around twice as high. In this context, it is not surprising that foreign applicants are significantly less likely than Whites to be admitted, especially since foreign students comprise 3% of the total undergraduate student body, whereas White students comprise 55% of it. Given the high standards, for example in terms of SAT scores, of Rice's admissions process for all students, it is also not surprising that the odds of admission for Black, Hispanic and Native American applicants are significantly higher than those of White students given the large proportion of all of Rice's students who fall into one of these categories of historically underrepresented groups. With a relatively self-selected domestic minority applicant pool (for example, reflected by the fact that domestic minority applicants' mean SAT score is comparable to that of Shite applicants), a larger share of the qualified domestic underrepresented minority applicants gain admission than the share of accepted White applicants.

At Rice, the odds of admission for all applicants remained virtually unchanged between 2001 and 2003 relative to those in 2000. In 2004, however, the odds of admission for applicants as a whole became significantly lower than they had been prior. Among foreign applicants, however, the

odds of admission remained virtually unchanged, indicating a relative advantage in gaining admission given that the odds were decreasing for all applicants. The overall advantage of foreign applicants in their odds of admission towards the later part of the 1990s and the early part of the new century highlights with even more salience the desire of universities of ranging selectivity and public/private status to attract and admit foreign applicants.

Heightened selectivity among foreign applicants to each of the four institutions of ranging selectivity, size of their undergraduate student body, and public/private university status is accompanied by a general trend of increasing size among the foreign student body at each institution. Universities of ranging selectivity desire foreign students. They want to attract as selective of a group of foreign students as they are able—reflected in the higher SAT scores of admitted foreign applicants compared to domestic applicants. Admitting an increasingly selective group of foreign students further reinforces their reputation as an 'up and coming' university to which foreign students, reflecting an increasingly globally diverse student body, seek admission.

Foreign Students and the Science/Engineering Myth

It is a commonly held belief that a large part of the 'status' that comes with enrolling foreign students is their high test scores and top-notch technical, mathematical and science training received in their home country with specialization beginning from a young age. Admitting scientists and engineers at the undergraduate level then not only creates a pipeline for their contributions to the U.S. economy and research and development but more immediately to the undergraduate science and engineering divisions of their university (like the petroleum engineering program at UT which is largely populated by foreign students) (Teitelbaum 2006). This potential among foreign students is also seen as a primary means by which to ameliorate the *perceived* 'shortage of U.S.-born scientists and engineers', especially given the fact that the U.S. ranks very low in terms of math and science

training on international measures of student achievement by nationality (Lowell, Bump, and Martin 2007). The following examination of students' odds of admission by proposed division of major debunks many of these myths.

[Table 6 about here.]

Even when controlling for students' high school performance and family social class, the analysis in Table 6 reveals striking contrasts between the odds of admission for all applicants by proposed major and the odds for foreign applicants of the same majors. At UT-Austin, among all applicants, those proposing majors in engineering/computer science, fine arts, physical/natural sciences, education, or 'other' major are significantly more likely to be admitted relative to applicants proposing a major in the humanities. The odds for foreign applicants are quite different. In fact, and even in spite of the top-ranking petroleum engineering program at UT-Austin for which many foreign applicants may be admitted, the odds of admission relative to the odds for foreign applicants proposing a humanities major lean significantly in favor of foreign applicants proposing to major in fine arts and the social sciences. Foreign applicants proposing a major in the physical/natural sciences at UT-Austin are third in line for the highest odds of admission.[9] It is perhaps surprising that foreign students proposing a major in engineering or computer science are 36% *less* likely than humanities majors to be admitted over the period 1990-2003.[10]

At Texas A&M, applicants proposing majors in agriculture, general studies or 'other' for their major were most likely to be admitted between 1992 and 2002. Among foreign applicants,

[9] Foreign students proposing a major in fine arts are 2.54 times as likely to be admitted relative to humanities majors at UT-Austin (p=0.000). Foreign applicants proposing a social science major are 1.90 times more likely than foreign students proposing humanities majors (p=0.000), while those proposing a physical/natural science major are third in terms of preference for admission, being 1.30 times as likely to be admitted as humanities majors (p=0.026).

[10] Following the same model of equations described in footnote 2, multiplying the coefficients on engineering/CS*(foreign x engineering/CS)=.64. Significance is again determined using t-tests (t-statistic=24.9; p-value=0.000).

however, social science and health majors were most likely to be admitted.[11] At Texas Tech, there are no proposed majors for which applicants had significantly higher odds of admission. Among foreign applicants in particular, those proposing 'other' as their intended major were 5.65 times more likely that foreign majors proposing humanities to be admitted.[12] Notably, foreign engineering/computer science majors were significantly *less* likely to be admitted than foreign applicants proposing humanities.[13] At Rice, applicants proposing to major in architecture, engineering/computer science, fine arts, the physical/natural sciences, or the social sciences were significantly more likely to be admitted compared to proposed humanities majors. Foreign applicants proposing majors in fine arts, however, were significantly more likely to be admitted than those proposing majors in the humanities. Students proposing a major in the physical/natural sciences were only marginally significantly more likely than humanities majors to be admitted.[14]

A clear pattern in favor of *non*-engineering/computer science (CS) fields across these institutions is very apparent. In fact, students proposing engineering/CS are often times significantly *less* likely to be admitted compared to those proposing a major in the humanities. Given this reality, one explanation may be that admissions offices are not responding to a *perceived* shortage of scientists and engineers by admitting those likely to go into such fields at the undergraduate level. On the other hand, it is more likely that admissions officers are not seeking foreign applicants in these fields because native students fill this niche—as indicated by the heightened odds of admission among overall applicants (driven by domestic applicants who comprise the majority of all applicants) proposing majors in engineering/computer science and the physical/natural sciences. The findings

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[11] Foreign social science majors were 3.53 times more likely than foreign applicants proposing humanities (t-statistic=3.16; p-value=0.075). Health: 2.57 times more likely than foreign applicants proposing humanities (t-statistic=6.90; p-value=0.009).

[12] Other major: t-statistic=8.99; p-value=0.003.

[13] Foreign applicants proposing engineering/CS were 59% less likely than humanities majors to be admitted (t-statistic=4.03; p-value=0.045).

[14] Foreign applicants proposing majors in the fine arts were 7.16 times more likely than humanities majors to be admitted (t-statistic=16.89; p-value=0.000). Foreign applicants proposing a major in the physical/natural sciences were

of this paper are in line with those of a report commissioned by the Sloan Foundation to empirically address the claim of a shortage of native scientists and engineers (Lowell et. Al. 2007). Rather, like the Sloan report, my findings provide evidence that universities are not acting counter to their rational interests by failing to admit foreign applicants in these fields. In fact, even with highly-qualified foreign applicants (demonstrated by above-average SAT scores, for example), Texas universities seem to be able to fill their need for scientists and engineers largely through their domestic applicant pool.

Conclusion

Today, admitting foreign students is the newest signal of institutional wealth and 'diversity'. Being able to attract and admit foreign students also signals that a university has attained a high enough status to be able to draw students from around the world. The reality that graduating high school cohorts will continue increasing in size for at least a decade to come as a result of the echo of the baby boom means issues of college access for underrepresented students will be at the forefront of the agenda (Western Interstate Commission on Higher Education 2008). Domestic minorities, including a growing pool of Hispanic immigrants, are among those who tend to have the highest barriers to higher education access. Hispanics will comprise a larger proportion of graduating high school cohorts in Texas since the total fertility rate of first generation Hispanic immigrants is significantly higher than that of native women in the U.S. Policy makers, universities, and concerned citizens must address whether admitting foreign students of color enables universities to 'increase diversity' without confronting domestic inequality. This question is particularly relevant since findings of this paper indicate foreign students are not being admitted primarily to fill spots in the

(continued)
1.81 times more likely than humanities majors to be admitted (t-statistic=3.14; p-value=0.076).

sciences and engineering where many people might think foreign students would have a comparative advantage over domestic students.

Although foreign students comprise only a small fraction of all undergraduates at these Texas universities, like most universities around the country, it is important to remember that foreign student applications have only begun a trend of exponential increase in the last 10-15 years. Part of the reason for the increase in foreign applicants is developing countries, particularly in Asia and Latin America, have undergone significant economic development in the past several decades. The size of India's middle class, for example, has increased by 500% in the last eight years (Financial Express Bureau 2008). As more families are able to afford to send their children abroad for college, selectivity in foreign admissions will only continue to increase as institutions attract a more and more select group of foreign applicants.

As admitting foreign students becomes more incorporated into increasing 'institutional diversity'—and institutional rank—there are many contradictions between universities' genuine commitment to educating *Texans*, particularly minority Texans, and their goals of maintaining and/or increasing their status as world-class research universities. Scholars and educators would likely hope that increasing 'diversity' would be driven by the goal of preparing students for life in an increasingly international and global society. At best, universities seek to attract foreign students less because of the cache associated with having them. Universities would want foreign students because they are committed to the forward-looking goal of shaping future leaders for an international society. At worst, admitting foreign students provides a shortcut for institutions to increase the racial diversity within their student body without confronting legacies of inequality in the U.S.

In reality, the process of negotiating between institutional commitments to diversity and the desire for a high institutional rank may actually perpetuate the reproduction of privilege by attracting foreign students at a time when the college squeeze in Texas and the assault on race-based

affirmative action present, as in many parts of the country, barriers to higher education access for underrepresented domestic minority students. As Tienda, Leicht and Sullivan (2003) point out, the Top 10 Percent Law is *not* sufficient for increasing the representation of underrepresented minorities on public university campuses in Texas. The fact that public universities subsidize all students (even full fee-paying students) above the sticker price of attendance with tax-payer dollars (private universities do so out of their endowments) means public universities around the country, like UT-Austin, Texas A&M and Texas Tech, are responsible for being transparent about their motivations for admitting foreign students.

Foreign students do in fact increase the numbers of racial minority students at public universities. Foreign students also bring valuable new perspectives. They are valuable assets for universities' educational environments. At the same time, universities should attend to ensuring that they admit foreign students for these reasons first and foremost. Otherwise, foreign students will increasingly be valued for the status they reflect rather than for their individual and collective contributions and the unique international experiences they bring to the education of *all* students. As we move forward with this latest status frontier of incorporating foreign students into American higher education, keeping these issues in mind will prevent universities from becoming so wrapped up in 'status' that they push to the side issues of access for domestic minority students at a time when Texas is experiencing an assault on race-based admissions preferences. Admitting foreign students enables universities to increase 'diversity' *and* institutional status, but doing so does not address the core of racial inequality in America.

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Figure 1. Enrolled Foreign Students By Institution Over Time

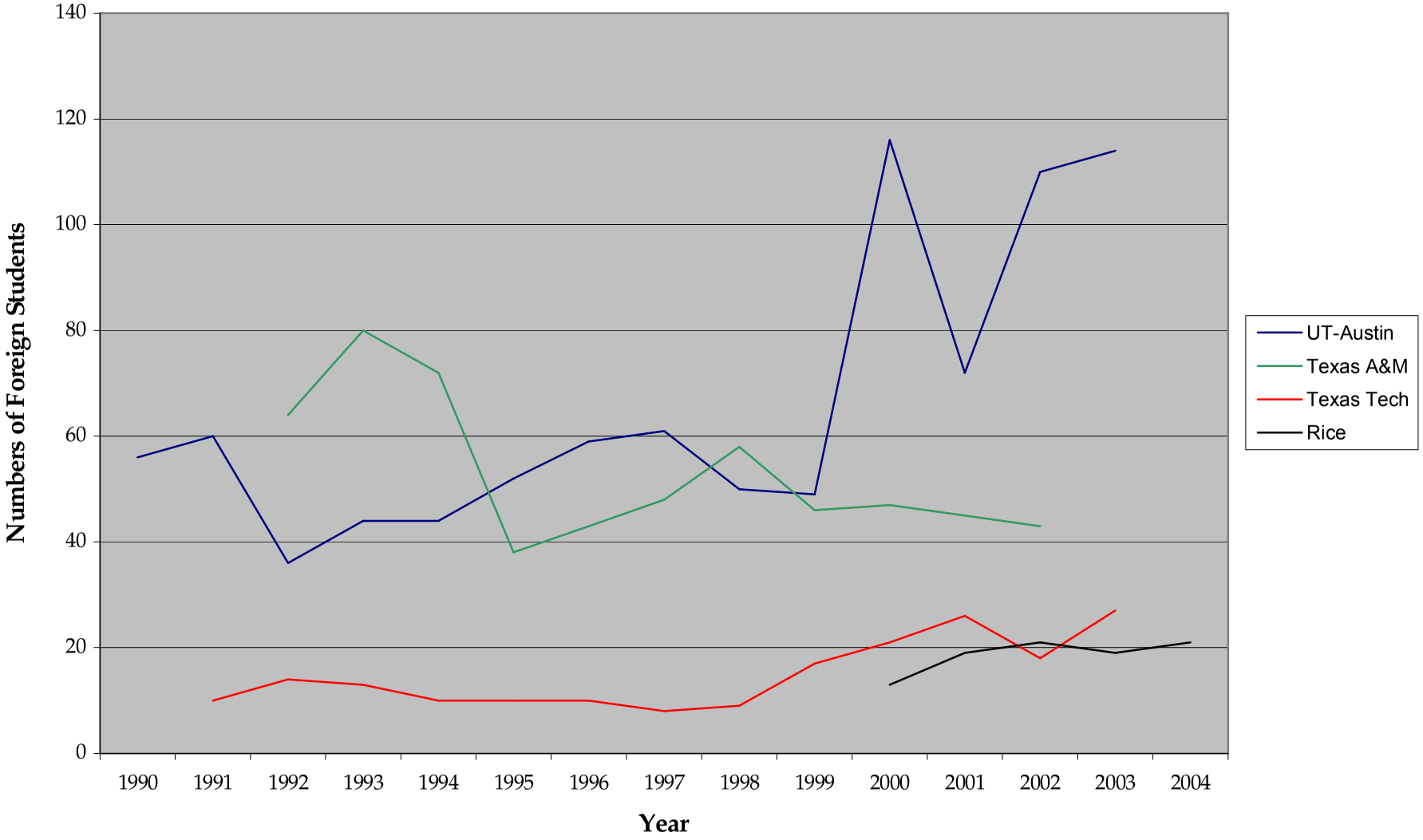

Figure 2. Numbers of Foreign Applicants by Institution and Year, 1990-2004

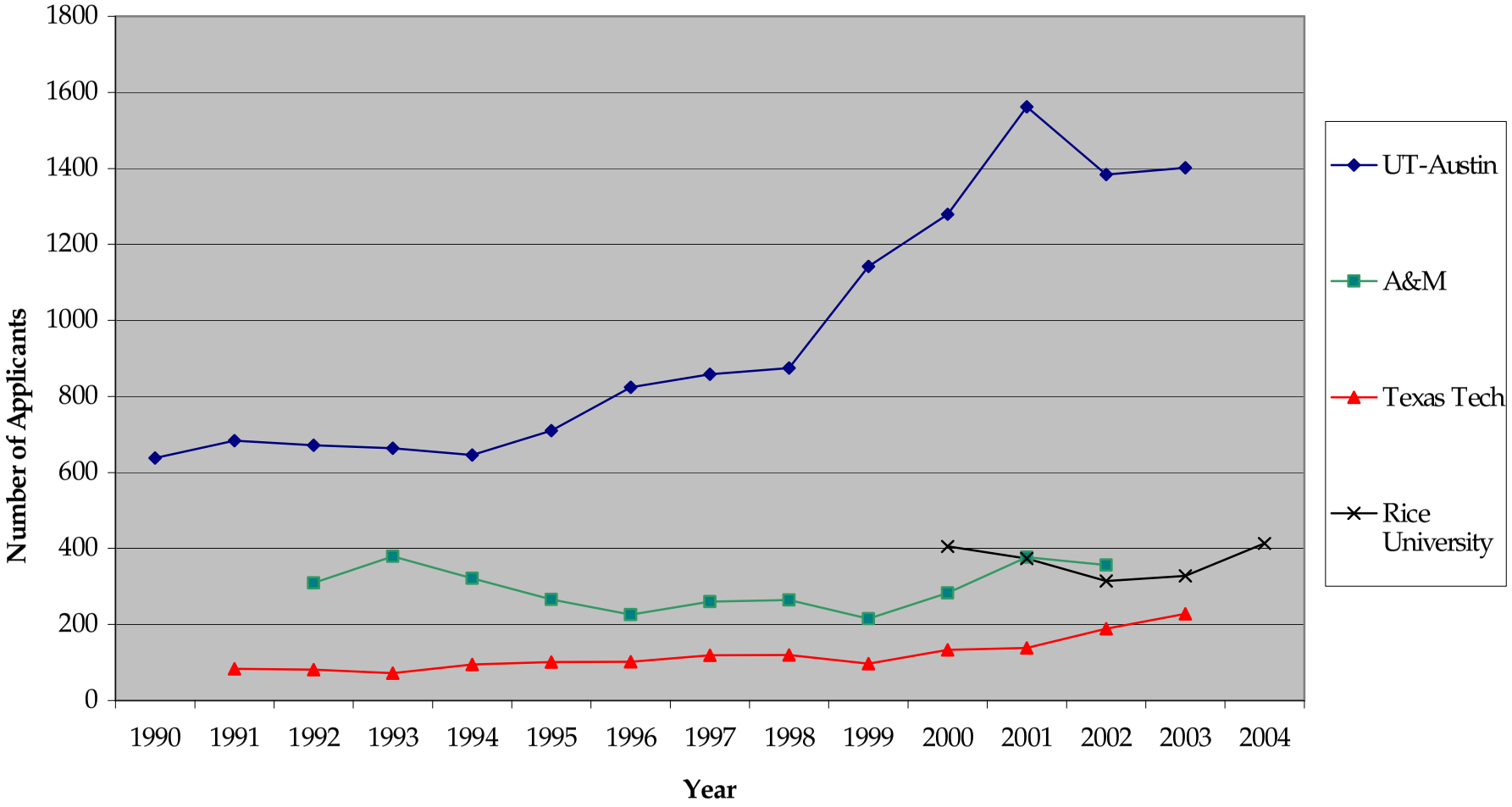

Figure 3. Percent of Foreign Applicants Admitted by Institution and Year, 1990-2004

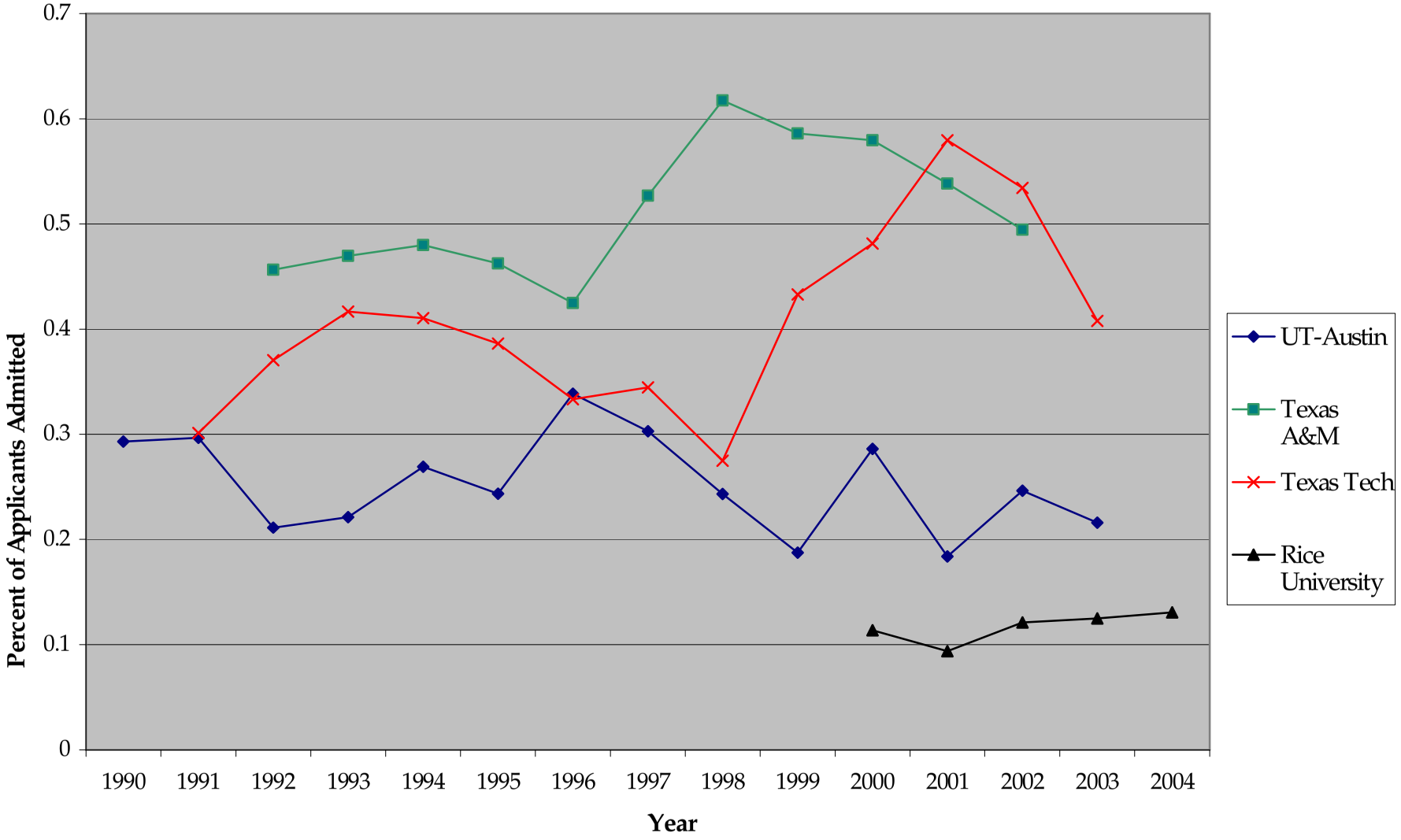

Table 1. Ethnic/National Institutional Composition, by Institution (%)									
Institution	Foreign	Domestic Asian	Domestic Black	Domestic Hispanic	Domestic White	Domestic Native American	Domestic Other	Domestic Mexican	Domestic Multiracial
UT-Austin, 1990-2003	1	16	4	15	65	0.5	n/a	n/a	n/a
Texas A&M, 1992-2002	1	4	3	11	80	0.5	1	n/a	n/a
Texas Tech, 1991-2003	0.5	2	3	10	85	0.5	0.03	n/a	n/a
Rice, 2000-2004	3	16	7	5	55	0.5	5	7	3

Table 2. Applicant Summary Statistics by Foreign Status and Institution			
	# Foreign Applicants	Acceptance Rate (%)	
Institution		Foreign	Domestic
UT-Austin, 1990-2003	13,340	72	25
Texas A&M, 1992-2002	3,256	51	74
Texas Tech, 1991-2003	1,558	25	72
Rice, 2000-2004	1,833	12	24

Table 3. Mean SAT scores of Applicants by Foreign Status and Institution				
	Mean SAT score			
Institution	Foreign Applicants	Foreign Admitted[1]	Foreign Rejected	Domestic Applicants
UT-Austin, 1990-2003	1163	1274***	1120***	1183
Texas A&M, 1992-2002	1135	1190***	1069***	1142
Texas Tech, 1991-2003	1078	1117***	1010***	1079
Rice, 2000-2004	1291	1394***	1276***	1360

[1] T-tests for significance between mean SAT scores of admitted and rejected foreign applicants are significant at .1%

Table 4_a.
'High' (Above 1300) SAT Score Foreign Applicants' Changing Odds of Admission Over Time, By Institution

	UT-Austin 1990-2003		Texas A&M 1992-2002		Texas Tech 1991-2003[3]		Rice 2000-2004	
	No Controls	Controls[†]	No Controls	Controls[†]	No Controls	Controls[†]	No Controls	Controls[†]
SAT above 1300 (=1)[1]	4.86**	4.26**	5.39**	5.35*	1.37	0.67	4.69**	4.55**
	(1.29)	(1.20)	(3.48)	(3.58)	(1.71)	(0.86)	(1.71)	(1.71)
SAT Score Missing	0.16**	0.18**	0.41**	0.36**	0.00**	0.35*	0.18*	0.19*
	(0.06)	(0.07)	(0.11)	(0.10)	0.00	(0.18)	(0.13)	(0.14)
Year								
1990	ref	ref						
1991	1.01	0.95			ref	ref		
	(0.15)	(0.15)						
1992	0.46**	0.42**	ref	ref	1.36	ref		
	(0.08)	(0.07)			(0.45)			
1993	0.49**	0.37**	0.95	0.95	1.66	0.85		
	(0.08)	(0.07)	(0.19)	(0.21)	(0.56)	(0.34)		
1994	0.63**	0.44**	1.33	1.42	1.62	3.83**		
	(0.10)	(0.08)	(0.28)	(0.33)	(0.51)	(1.36)		
1995	0.57**	0.40**	0.86	0.92		0.55		
	(0.09)	(0.07)	(0.18)	(0.21)		(0.21)		
1996	1	0.68*	0.64*	0.53**	0.01**	0.26**		
	(0.14)	(0.11)	(0.14)	(0.13)	(0.01)	(0.11)		
1997	0.79	0.60**	0.89	0.83	0.17	5.78		
	(0.11)	(0.09)	(0.18)	(0.19)	(0.26)	(6.93)		
1998	0.61**	0.47**	1.38	1.27	0.16**	7.84		
	(0.09)	(0.07)	(0.28)	(0.28)	(0.08)	(9.56)		
1999	0.30**	0.22**	1.31	1.25	0.01**	0.69		
	(0.05)	(0.04)	(0.28)	(0.29)	(0.01)	(0.46)		
2000	0.85	0.68**	1.14	1.02	0.01**	0.89	ref	ref
	(0.11)	(0.10)	(0.23)	(0.23)	(0.01)	(0.58)		
2001	0.29**	0.23**	0.96	0.88	0.01**	1.09	0.99	1.09
	(0.04)	(0.04)	(0.18)	(0.18)	(0.01)	(0.71)	(0.45)	(0.50)
2002	0.54**	0.35**	0.69	0.56**	0.01**	2.35	1.46	1.58
	(0.07)	(0.05)	(0.13)	(0.12)	(0.02)	(1.49)	(0.66)	(0.73)
2003	0.39**	0.18**			0.01**	0.85	1.41	1.38
	(0.06)	(0.03)			(0.01)	(0.54)	(0.64)	(0.64)
2004							1.25	1.29
							(0.58)	(0.61)

Table 4_b.
'High' (Above 1300) SAT Score Foreign Applicants' Changing Odds of Admission Over Time, By Institution

	UT-Austin 1990-2003		Texas A&M 1992-2002		Texas Tech 1991-2003[3]		Rice 2000-2004	
	No Controls	Controls[†]	No Controls	Controls[†]	No Controls	Controls[†]	No Controls	Controls[†]
Year x SAT Above 1300[2]								
1990	ref	ref						
1991	0.72	0.79			ref	ref		
	(0.26)	(0.30)						
1992	1.98	2.34*	ref	ref	ref	ref		
	(0.73)	(0.92)						
1993	1.88	2.42*	1.12	1.01	ref	ref		
	(0.67)	(0.93)	(1.02)	(0.96)				
1994	1.99	3.18**	0.75	0.57	ref	ref		
	(0.72)	(1.22)	(0.69)	(0.53)				
1995	2.49*	3.50**	2.17	2.18	ref	ref		
	(0.94)	(1.41)	(2.16)	(2.28)				
1996	1.67	2.55*	1.06	0.78	ref	ref		
	(0.59)	(0.95)	(0.89)	(0.68)				
1997	5.40**	9.41**	1.57	1.44	ref	ref		
	(2.24)	(4.09)	(1.33)	(1.25)				
1998	1.89	2.56*	0.78	0.75	ref	ref		
	(0.65)	(0.93)	(0.67)	(0.67)				
1999	2.57**	3.76**	0.43	0.34	1.42	3.37		
	(0.83)	(1.30)	(0.35)	(0.30)	(2.18)	(5.33)		
2000	0.95	1.29	1.29	1.42			ref	ref
	(0.29)	(0.42)	(1.02)	(1.18)				
2001	2.29**	3.24**	0.78	0.7	1.33	1.05	0.7	0.73
	(0.70)	(1.06)	(0.56)	(0.52)	(2.01)	(1.61)	(0.38)	(0.39)
2002	1.15	1.7	1.45	1.62	0.37	0.47	0.55	0.53
	(0.35)	(0.55)	(1.07)	(1.23)	(0.56)	(0.74)	(0.29)	(0.28)
2003	1.19	1.95*			4.25	6.51	0.61	0.65
	(0.36)	(0.64)			(6.29)	(9.90)	(0.32)	(0.35)
2004							0.7	0.66
							(0.37)	(0.36)
Observations	13035	13033	3256	3256	1553	1552	1833	1833
Pseudo R-squared	0.17	0.30	0.06	0.17	0.12	0.21	0.07	0.10

Standard errors in parentheses

* significant at 5%; ** significant at 1%

[†]Controls not shown in table but included in model: female, high school rank, AP exam taken or scores reported, high school characteristics, first choice major, and students' social class (detailed in Appendix B).

[1] If SAT score is not reported, ACT score is converted to an SAT scale and included. If no score is reported, sample size is preserved by controlling for SAT/ACT score missing.

[2] Controls for SAT score missing are included but not shown in table.

[3] Sample sizes of foreign applicants with SAT scores above 1300 in the years 1991-1998 and 2000 are not large enough to support inclusion as single-year dummies and have therefore been excluded as the reference group in order to preserve sample size.

Table 5_a.
Odds of Admission Based on Foreign/Domestic Applicant Status Over Time, By Institution[1]

	UT-Austin 1990-2003	Texas A&M 1992-2002	TX Tech 1991-2003	Rice 2000-2004
Foreign Status, Domestic Students by Race				
Foreign Students	1.51**	1.86**	0.20**	0.65*
	(0.17)	(0.26)	(0.08)	(0.11)
Domestic Asian	0.90**	0.72**	0.60**	0.62**
	(0.02)	(0.02)	(0.03)	(0.02)
Domestic Black	1.69**	2.07**	0.47**	4.45**
	(0.05)	(0.08)	(0.02)	(0.29)
Domestic Hispanic, Non-White	1.57**	1.75**	0.73**	2.49**
	(0.03)	(0.04)	(0.02)	(0.18)
Domestic Native American	0.73**	1.06	0.84	2.41**
	(0.07)	(0.11)	(0.11)	(0.50)
Domestic Other Race	0.84	0.42**	0.16**	0.97
	(0.11)	(0.12)	(0.02)	(0.10)
White	ref	ref	ref	ref
Year of Desired Admission				
1990	ref			
1991	1.19**		ref	
	(0.04)			
1992	0.78**	ref	10.12**	
	(0.03)		(1.38)	
1993	0.76**	1.34**	1.34**	
	(0.03)	(0.05)	(0.07)	
1994	0.86**	0.90**	15.49**	
	(0.03)	(0.03)	(2.13)	
1995	0.69**	1	1.39**	
	(0.03)	(0.04)	(0.07)	
1996	0.43**	1.10**	0.59**	
	(0.02)	(0.04)	(0.03)	
1997	1.36**	1.33**	0.05**	
	(0.06)	(0.05)	0.00	
1998	0.56**	2.94**	0.05**	
	(0.03)	(0.12)	0.00	
1999	0.44**	1.01	0.02**	
	(0.02)	(0.04)	0.00	
2000	1	0.59**	0.03**	ref
	(0.05)	(0.02)	0.00	
2001	0.93	0.55**	0.02**	1.05
	(0.05)	(0.02)	0.00	(0.05)
2002	0.88*	0.59**	0.02**	1.02
	(0.04)	(0.02)	0.00	(0.05)
2003	0.09**		0.01**	1.02
	0.00		0.00	(0.05)
2004				0.87**
				(0.04)

Table 5_b.
Odds of Admission Based on Foreign/Domestic Applicant Status Over Time, By Institution[1]

	UT-Austin 1990-2003	Texas A&M 1992-2002	TX Tech 1991-2003	Rice 2000-2004
Foreign x Year of Desired Admission				
1990	ref			
1991	0.83		ref	
	(0.13)			
1992	0.53**	ref	1.37	
	(0.09)		(0.60)	
1993	0.48**	0.8	0.41	
	(0.08)	(0.14)	(0.21)	
1994	0.62**	1.18	1.04	
	(0.10)	(0.22)	(0.45)	
1995	0.68*	0.75	0.15**	
	(0.11)	(0.15)	(0.07)	
1996	2.19**	0.45**	0.08**	
	(0.32)	(0.09)	(0.04)	
1997	0.54**	0.61*	1.42	
	(0.08)	(0.12)	(0.69)	
1998	0.75*	0.40**	1.1	
	(0.11)	(0.08)	(0.58)	
1999	0.49**	0.98	1.44	
	(0.07)	(0.21)	(0.76)	
2000	0.51**	1.46	4.64**	ref
	(0.07)	(0.29)	(2.18)	
2001	0.21**	1.19	20.14**	0.68
	(0.03)	(0.22)	(9.83)	(0.18)
2002	0.25**	0.85	118.70**	0.83
	(0.03)	(0.16)	(54.83)	(0.21)
2003	1.43*		17.77**	1.02
	(0.20)		(8.05)	(0.26)
2004				0.94
				(0.22)
Observations	224893	163027	105376	36190
Pseudo R-squared	0.47	0.37	0.40	0.17

Standard errors in parentheses
* significant at 5%; ** significant at 1%

[1] Controls not shown in table but included in model: female, high school rank, SAT/ACT score, AP exam taken or scores reported, high school characteristics, family social class characteristics, and first choice major (detailed in Appendix C).

Table 6_a.
Odds of Admission Based on Foreign/Domestic Applicant Status and Proposed Major, By Institution[1]

	UT-Austin 1990-2003	Texas A&M 1992-2002	TX Tech 1991-2003	Rice 2000-2004
Foreign Status, Domestic Students by Race				
Foreign Students	2.31**	0.52	1.14	0.56
	(0.18)	(0.36)	(0.48)	(0.17)
Domestic Asian	0.89**	0.72**	0.59**	0.62**
	(0.02)	(0.02)	(0.03)	(0.02)
Domestic Black	1.68**	2.07**	0.47**	4.45**
	(0.05)	(0.08)	(0.02)	(0.29)
Domestic Hispanic, Non-White	1.56**	1.75**	0.73**	2.49**
	(0.03)	(0.04)	(0.02)	(0.18)
Domestic Native American	0.73**	1.06	0.83	2.41**
	(0.07)	(0.11)	(0.11)	(0.50)
Domestic Other Race	0.86	0.42**	0.15**	0.97
	(0.12)	(0.12)	(0.02)	(0.10)
White	ref	ref	ref	ref
Proposed Major of Study				
Humanities	ref	ref	ref	ref
Architecture	0.53**	0.53**	0.85	1.92**
	(0.05)	(0.05)	(0.10)	(0.19)
Engineering/Computer Science	2.38**	0.95	1.12	1.80**
	(0.10)	(0.07)	(0.12)	(0.08)
Fine Arts	2.62**	0.60**	0.83	2.01**
	(0.14)	(0.09)	(0.09)	(0.17)
Physical/Natural Science	2.10**	0.95	0.91	1.46**
	(0.09)	(0.07)	(0.10)	(0.06)
Social Science	1.03	0.89	0.97	1.50**
	(0.04)	(0.06)	(0.10)	(0.07)
Business	1.35**	1.04	0.88	
	(0.06)	(0.24)	(0.10)	
Health	1.87**	1.11	0.96	
	(0.11)	(0.09)	(0.10)	
Education	2.97**	0.13	0.89	
	(0.20)	(0.27)	(0.13)	
Social Work	1.39		0.73	
	(0.42)		(0.15)	
Agriculture		1.50**	0.88	
		(0.12)	(0.11)	
Technology/Vocational Major		0.60**	0.91	
		(0.07)	(0.14)	
Interdisciplinary Major	1.58	0.86	0.8	
	(0.50)	(0.07)	(0.09)	
General Studies		2.31**	1.06	
		(0.16)	(0.19)	
Other Major	2.77**	44.79**	0.84	
	(0.26)	(7.59)	(0.09)	
Undeclared	1.27**			
	(0.05)			

Table 6_b.
Odds of Admission Based on Foreign/Domestic Applicant Status and Proposed Major, By Institution[1]

	UT-Austin 1990-2003	Texas A&M 1992-2002	TX Tech 1991-2003	Rice 2000-2004
Foreign Status x Proposed Major[2]				
Humanities	ref	ref	ref	ref
Architecture	0.26**	1.66	0.16**	0.99
	(0.07)	(1.62)	(0.08)	(0.50)
Engineering/Computer Science	0.27**	3.21	0.37*	0.89
	(0.02)	(2.20)	(0.16)	(0.29)
Fine Arts	0.97	8.19	0.54	3.56**
	(0.21)	(13.34)	(0.38)	(1.73)
Physical/Natural Science	0.62**	2.65	0.52	1.24
	(0.07)	(1.83)	(0.27)	(0.42)
Social Science	1.84**	3.97	0.21**	0.88
	(0.20)	(2.83)	(0.10)	(0.31)
Business	0.19**	5.37	0.15**	
	(0.02)	(8.17)	(0.07)	
Health	0.74	6.71*	0.22**	
	(0.28)	(5.17)	(0.11)	
Education	0.24*		0.07	
	(0.15)		(0.17)	
Agriculture		2		
		(1.47)		
General Studies		2.88		
		(2.02)		
Technology/Vocational		0.88		
		(1.06)		
Interdisciplinary Major		3.23	6.72	
		(3.89)	(26.02)	
Other Major	0.57	1.24	6.72**	
	(0.29)	(1.65)	(3.85)	
Observations	224891	163027	105376	36190
Pseudo R-squared	0.47	0.37	0.40	0.17

Standard errors in parentheses
* significant at 5%; ** significant at 1%

[1] Controls not shown in table but included in model: female, high school rank, SAT/ACT score, AP exam taken or scores reported, high school characteristics, family social class characteristics, and first choice major (detailed in Appendix C).

[2] Possible responses for division of major vary by institution. Blank categories indicate a particular division of proposed major is not available at that institution.

Appendix A. Percent of Applicants Not Submitting SAT/ACT Scores

Institution	Foreign	Domestic
UT-Austin, 1990-2003	15	1
Texas A&M, 1992-2002	20	0.13
Texas Tech, 1991-2003	68	40
Rice, 2000-2004	9	4

Appendix B. List of Controls for Table 3

female

HS Rank
Top 10%
Top 20%
30th+ percent
Rank missing

Received AP Exam Credit (=1)

HS Characteristics
Private HS (=1)
HS Type Missing
Feeder HS (=1)
Texas Resident (=1)

Family's Social Class
% Students at TX HS who are economically disadvantaged from TEA

UT-Austin has the following additional social class controls:
Father's Education Level
No HS
Some HS
HS Diploma or GED
Some College
BA/BS
Adv. Deg
Educ Level
Missing

Father's Income
Under $20,000
$20,000-$39,999
$40,000-$59,999
$60,000-$79,999
Above $80,000
Income Missing

Appendix C. List of Controls for Tables 4 & 5

female

SAT Score
Under 800
800-999
1000-1199
1200-1399
1400-1600
SATmiss

HS Rank
Top 10%
Top 20%
30th+ percent
Rank missing

Received AP Exam Credit (=1)

HS Characteristics
Private HS (=1)
HS Type Missing
Feeder HS (=1)
Texas Resident (=1)

Family's Social Class
% Students at TX HS who are economically disadvantaged (from TEA)

UT-Austin has the same additional social class control categories (detailed in Appendix B):
Father's Education Level
Father's Income