Predictors of Access and Success At General Academic Institutions

Predictors of Access and Success at General Academic Institutions

Report Contributors:

John O'Brien, Director
Wayne Pulver, Assistant Director
Ursula Parks, Assistant Director
Bill Parr, Assistant Director

Applied Research and Performance Audit Team
Garron Guszak, Manager
James Dilling, Senior Analyst
Ed Osner, Senior Analyst
Kofi Effah, Analyst
Ben McCulloch, Analyst
George Purcell, Jr., Analyst

PREDICTORS OF ACCESS AND SUCCESS AT GENERAL ACADEMIC INSTITUTIONS

The 2010–11 General Appropriations Act, Article III, Texas Higher Education Coordinating Board (THECB), Rider 60 directs the Legislative Budget Board (LBB) to conduct "a statistical study of the predictors of access and success in higher education." This report fulfils that direction. The first section of the report addresses the "access" portion of this direction. The second section evaluates the predictors themselves.

The study population for this analysis includes all Texas resident, first-time-in-college students who matriculated at a Texas public four-year institution. For this population, LBB staff selected students enrolled in 12 or more semester credit hours in the fall semester of their entering year who applied for financial aid and had accessible high school records. Applying these constraints enabled staff to analyze the largest number of explanatory variables by including data reported on financial aid forms as well as data reported from high schools.

LBB staff findings on access to public higher education analyze students that entered Texas institutions in fall 2006. For determining institutional variation in access, staff used school year 2006 students (the most recent for which we have proposed merit criteria) and 2011 institutional allocations and award values for TEXAS Grants in order to reflect additional funding as well as THECB allocation changes. The findings on predictors use students that entered in fall 2004 to fall 2006.

FINDINGS ON ACCESS

♦ The proportion of students applying for financial aid has increased over time, from 56.9 percent in fall 2004 to 74.0 percent for freshmen entering in fall 2009. In addition to the proportion of financial aid applicants increasing, the raw number of financial aid applicants also increased substantially over the six-year period, increasing from 46,757 to 53,246.

♦ Existing TEXAS Grant allocations do not correlate with TEXAS Grant-eligible populations at public four-year institutions. The likelihood of students receiving a TEXAS Grant award is determined largely by the institution they choose to attend—not their

preparation in high school nor their financial need relative to other students in the state.

♦ If the fiscal year 2011 allocation had been available to the entering class of fall 2006, and fiscal year 2011 TEXAS Grant award levels been applied, seven institutions would have received a large enough allocation to cover all of their eligible students having an Expected Family Contribution (EFC) of $4,000 or less with additional funding available for students not eligible for federal Pell Grants. In contrast, the allocations given to four institutions would have been insufficient to provide TEXAS Grants to all students having an EFC of $1,000 or less.

♦ Setting THECB-proposed college preparation criteria as a requirement for the TEXAS Grant program would enable most institutions to fully fund all identified students with an EFC of $4,000 or less at their institutions and would reduce existing inter-institution disparity significantly. An adjustment of existing allocations could remove all inter-institutional disparity.

♦ In the LBB staff simulation, 22.5 percent of initial TEXAS Grants would have been awarded to students who did not meet proposed preparation criteria and $4,000 EFC benchmarks.

♦ Restricting TEXAS Grant eligibility by changing college preparation eligibility criteria is a more powerful constraint on program size than restricting eligibility based upon a $4,000 EFC.

♦ The pool of eligible Black students is more sharply affected by the proposed preparation criteria than White or Hispanic students. Among students with an EFC less than $4,000 and who meet the proposed preparation criteria, the proportion of the eligible population that is Black falls from 21.6 percent under existing guidelines to 15.2 percent. The eligible Hispanic population is reduced from 42.1 percent under existing guidelines to 41.1 percent. If the THECB proposal to not change the existing allocation of TEXAS Grant funds by university is followed, however, this differential rate of academic

preparation will not result in a substantial change in the overall allocation of TEXAS Grants by race/ethnicity.

FINDINGS ON PREDICTORS OF SUCCESS

♦ Texas public four-year institutions had a six-year graduation rate of 50.1 percent for first-time, full-time fall 2004 Texas freshmen with financial aid packages.

♦ In six separate statistical models predicting graduation, there were five common measures of high school academic preparation after controlling for demographic factors: SAT score, class rank, completion of the Distinguished Achievement Plan (DAP), meeting Texas Success Initiative standards (exemption from developmental education), and completion of "college-level" coursework in high school.

♦ The single strongest financial aid predictor of success is receiving a workstudy award. TEXAS Grant is a significant predictor of success for students who entered higher education in school year 2004, however the shifting of those awards in school years 2005 and 2006 to needier students turns it into a proxy for low socioeconomic status and its positive effects are no longer apparent in those years.

♦ The preparation criteria outlined in the THECB proposed "Priority Plan" for the award of TEXAS Grants are significant predictors of success, with Texas Success Initiative completion—exemption from developmental education—being a particularly strong predictor of success.

♦ All of the indicators of high school preparation associated with higher levels of graduation have increased since school year 2004, suggesting that later entering cohorts should have increased levels of graduation.

ACCESS AND THE TEXAS GRANT

The 2010–11 General Appropriations Act, Article III, Texas Higher Education Coordinating Board (THECB), Rider 60 directs the Legislative Budget Board (LBB) to conduct "a statistical study of the predictors of access and success in higher education." This report fulfils that direction. The first portion of the report will address the "access" portion of this direction.

The term "access" is very broad, potentially encompassing such diverse topics as geographic proximity, high school counselor competence, and student knowledge of higher education opportunities. Within the context of the legislative debate that led to Rider 60, however, "access" was used as shorthand for distributional issues related to TEXAS Grant funding and the effect that any proposed merit criteria might have upon these distributions.

The statutorily eligible population for the TEXAS Grant is large. Section 56.304 of the Texas Education Code lists the requirements for incoming freshmen:

1. Resident of the state by THECB rules (note that this includes alien students eligible for Texas residency under Texas Education Code 54.052);

2. Graduate with the Recommended High School Program (RHSP), the Distinguished Achievement Plan (DAP) or an equivalent;

3. Enroll at least three-quarter time (nine semester credit hours) in an undergraduate institution no more than 16 months following graduation from high school;

4. Apply for financial aid;

5. "Meet financial need requirements as defined by the coordinating board."

In addition to these eligibility provisions, Section 56.303 of the Texas Education Code specifies the criteria for administering the program:

1. THECB is granted rulemaking authority but is required to consult with student financial aid officers;

2. THECB is charged with developing rules for allocation "in the most efficient manner possible";

3. The program cannot exceed appropriations—it is not an entitlement;

4. Both THECB and institutions "shall give highest priority" to students who demonstrate the greatest financial need.

Finally, Section 56.307 of the Texas Education Code defines the grant amount that may be awarded as the amount determined by the THECB as the average statewide amount of tuition and fees that a resident student enrolled full-time would be charged.

The statutory language that authorizes the TEXAS Grant program thus places few explicit upper limits on the potential

population statutorily eligible for the awards. For the class of 2009, 82.5 percent of Texas high school graduates achieved the RHSP or DAP credential. An increasing number of students are applying for financial aid, up from 56.9 percent in fall 2004 to 74.0 percent in fall 2009. Finally, as the cost of tuition has increased the number and proportion of students having some financial need has also increased and the award value of each TEXAS Grant has increased significantly. All of these factors have led to a program that remains significantly underfunded despite large increases in legislative appropriations from "an amount not less than" $331,722,686 for the 2006–07 biennium to "an amount not less than" $614,282,952 for the 2010–11 biennium (both figures are from rider language in the concordant General Appropriation Act).

THECB has attempted to address these funding shortfalls by directing institutions to first make awards to students with an Expected Family Contribution (EFC) of $4,000 or less, putting into practice the "highest priority" to students with the "greatest need" found in Section 56.303. (EFC is a federal calculation that determines how much a student can be expected to pay for their education based upon household income and wealth.) Because of this administrative decision, the LBB staff analysis is focused on those students with an EFC of $4,000 or less. (This was also the cut off for federal Pell Grant funding during the study period.)

DATA ANALYSIS AND DISCUSSION

The proportion of students applying for financial aid is increasing. **Figure 1** shows this growth among first-time, full-time freshman entering a public four-year institution, from 56.9 percent in school year 2004 to 74.0 percent for freshmen entering in school year 2009. In addition to the proportion of financial aid applicants increasing, the raw number of financial aid applicants also increased by 12,778

over the six-year period, a rate of increase of 48.0 percent compared to an overall growth rate of first-time, full-time freshmen of 13.9 percent (46,757 to 53,246).

There was no evidence that the increase in students applying for financial aid had a major impact on the type of financial aid packages they receive. **Figure 2** shows the "average" financial aid package offered to entering first-time, full-time freshmen in each of the last six years. These package proportions have remained relatively consistent.

ALLOCATION UNDER EXISTING TEXAS GRANT CRITERIA

The population analyzed is further restricted in the following manner. First, only initial TEXAS Grant awards are considered. Because renewal awards are given priority, allocation decisions made in initial grants largely determine the scope of the program in future years. Second, the study examines only the statutorily eligible population for school year 2006–07, the most recent year for which we can determine eligibility under proposed merit criteria—first-time freshmen enrolled at least three-quarter time who applied for financial aid. Third, the analysis is restricted to those who entered public four-year institutions as freshmen (and thus upper-level institutions such as the University of Houston at Clear Lake are not included). Two institutions are not included (the University of Texas at Tyler and the University of Texas at Brownsville) because missing data did not allow LBB Staff to determine TEXAS Grant eligibility under potential new criteria for the program. Finally, only those students for whom merit criteria data are available are included in the institutional analysis. Because of these limitations the numbers in this report will not match existing THECB data products. This analysis includes 27,528 of 61,097 first-time, full-time students entering a Texas public institution in fall 2006.

FIGURE 1
FIRST TIME, FULL-TIME TEXAS FRESHMAN AID FINANCIAL APPLICATIONS AT GENERAL ACADEMIC INSTITUTIONS SCHOOL YEARS 2004 TO 2009

STUDENT GROUP	2004	2005	2006	2007	2008	2009
Financial aid applicants	26,612	27,169	27,528	34,531	36,056	39,390
Total first-time, full-time students	46,757	47,079	47,192	49,250	49,855	53,246
Percentage applying for financial aid	56.9	57.7	58.3	70.1	72.3	74.0

NOTE: Does not include students who enrolled for less than 12 hours in the fall semester, students without a high school diploma, or students with unmatchable social security numbers.
SOURCES: Legislative Budget Board; Texas Higher Education Coordinating Board.

FIGURE 2
FIRST TIME, FULL-TIME TEXAS FRESHMAN FINANCIAL AID PACKAGES AT GENERAL ACADEMIC INSTITUTIONS
SCHOOL YEARS 2004 TO 2009

METHODS USED TO SATISFY COST OF ATTENDANCE	2004	2005	2006	2007	2008	2009
Grants	30.7%	30.9%	29.4%	26.6%	28.2%	29.7%
Loans	13.4%	15.1%	14.8%	13.0%	11.5%	11.7%
Expected Family Contribution	34.0%	31.3%	34.1%	39.9%	41.7%	40.6%
Waivers*	0.0%	0.5%	0.5%	0.5%	0.5%	0.3%
Workstudy	0.1%	0.9%	0.1%	0.6%	0.7%	0.3%
Unmet Need	21.8%	21.3%	20.4%	19.4%	17.4%	17.4%

*Waiver percentage understates this aid because not all are included and some are accounted for by adjusting the Cost of Attendance.
NOTE: Does not include students who enrolled for less than 12 hours in the fall semester, students without a high school diploma, or students with unmatchable social security numbers.
SOURCES: Legislative Budget Board; Texas Higher Education Coordinating Board.

The most recent cohort of students for which merit criteria data is available is the 2006–07 entering freshman class. From school years 2006–07 to 2010–11, however, the number of TEXAS Grant initial awards increased substantially due to increased appropriations from the Legislature. To reflect this in the allocation discussion that follows, LBB staff applied the number of awards by institution in school year 2010–11 to the class that entered in fall 2006—in other words, modeling how the allocation in fall 2006 would have looked had the funding of school year 2010–11 been available.

TEXAS Grant funds are allocated to the institution and disbursed to students through the financial aid packaging process. During the time frame of this study, universities were given a determinative sum of money from THECB to cover both an estimated number of renewal awards and the institutions proportional share of initial awards based on its previous year's enrollment of needy students. Renewal awards have priority and were funded from the allocation first, as long as the student met the statutory progress requirements of Texas Education Code 56.30. The remaining funds were then distributed to freshman students. (THECB has subsequently changed this methodology beginning with the fall 2009 entering cohort of students making a statewide pool of funds available for all renewal awards and only allocating initial award funds by institution as described above.)

For fall 2006, the maximum TEXAS Grant award amount was $4,750 and rose to $5,280 for fall 2008. For fall 2010 the TEXAS Grant amount is $6,780.

One fundamental access issue relating to the allocation of these funds is the level of funding available per eligible freshman. **Figure 3** shows how this varies by institution for all eligible students under $8,000 EFC and for those eligible students who also have an EFC of less than or equal to $4,000 (the threshold for federal Pell Grant eligibility). The figure is sorted on this latter value.

There is a wide range of variation in the dollars available at the institutional level. While the statewide average is $2,827 per statutorily eligible freshman and $5,591 per Pell Grant eligible freshman, the available per-student funding amounts for the eligible population range as low as $1,496 at Texas Tech University to $10,029 at the University of Houston-Downtown, a difference of $8,533. The range of funding is somewhat greater if the more restrictive $4,000 EFC criteria is used; from $3,323 at Angelo State University to $12,388 at the University of Houston-Downtown, a difference of $9,065. Institutions with larger per-student TEXAS Grant allocations are able to award more TEXAS Grants and, in the case of institutions with per-student funding above the $6,780 annual TEXAS Grant amount for school year 2010–11, also provide some TEXAS Grants to students who would not be eligible for these awards at other institutions due to a high EFC.

What this figure demonstrates is that the existing TEXAS Grant allocation does not correlate with TEXAS Grant-eligible populations at public, four-year institutions. The practical effect of the large difference in available initial TEXAS Grant award funds is that the chance any individual student receives an award is determined largely by available TEXAS Grant funds at the institution they choose to

FIGURE 3
ESTIMATED TEXAS GRANT INITIAL AWARD DOLLARS PER ELIGIBLE FRESHMAN
2011 INITIAL GRANT ALLOCATIONS AND FALL 2006 ENTERING FRESHMEN

INSTITUTION	2011 INITIAL AWARD DOLLARS	FALL 2006 STATUTORILY ELIGIBLE FRESHMEN	FALL 2006 $ PER STATUTORILY ELIGIBLE FRESHMAN	FALL 2006 LESS THAN $4000 EFC FRESHMEN	FALL 2006 $ PER FRESHMAN WITH EFC LESS THAN $4,000
University of Houston - Downtown	$3,369,660	336	$10,029	272	$12,388
The University of Texas at Dallas	$1,695,000	539	$3,145	155	$10,935
The University of Texas at Arlington	$5,132,460	1,116	$4,599	513	$10,005
The University of Texas at Tyler	$1,233,960	379	$3,256	139	$8,877
Texas Woman's University	$2,020,440	479	$4,218	240	$8,419
Texas A&M University - Commerce	$1,654,320	398	$4,157	205	$8,070
University of Houston	$7,790,220	1,927	$4,043	1,014	$7,683
Midwestern State University	$1,044,120	400	$2,610	162	$6,445
Texas A&M University - Kingsville	$2,189,940	554	$3,953	349	$6,275
Sul Ross State University	$827,160	202	$4,095	135	$6,127
Tarleton State University	$1,891,620	841	$2,249	310	$6,102
The University of Texas of the Permian Basin	$644,100	179	$3,598	107	$6,020
Texas State University - San Marcos	$5,173,140	1,839	$2,813	876	$5,905
Texas Southern University	$3,586,620	786	$4,563	626	$5,729
Lamar University	$2,508,600	865	$2,900	445	$5,637
West Texas A&M	$1,457,700	558	$2,612	265	$5,501
The University of Texas at El Paso	$6,061,320	1,541	$3,933	1,112	$5,451
The University of Texas at San Antonio	$6,305,400	2,614	$2,412	1,157	$5,450
Sam Houston State University	$3,145,920	1,240	$2,537	583	$5,396
University of North Texas	$5,247,720	2,222	$2,362	996	$5,269
Texas A&M International University	$1,972,980	507	$3,891	399	$4,945
Prairie View A&M University	$2,766,240	817	$3,386	569	$4,862
Stephen F. Austin State University	$2,956,080	1,511	$1,956	627	$4,715
Texas A&M University - Corpus Christi	$1,905,180	856	$2,226	411	$4,635
Texas Tech University	$3,627,300	2,424	$1,496	797	$4,551
The University of Texas at Austin	$6,827,460	3,265	$2,091	1,510	$4,521
Texas A&M University	$4,929,060	2,639	$1,868	1,133	$4,350
Texas A&M University at Galveston	$203,400	119	$1,709	48	$4,238
The University of Texas - Pan American	$7,037,640	2,084	$3,377	1,689	$4,167
Angelo State University	$1,518,720	974	$1,559	457	$3,323
Statewide	**$96,723,480**	**34,211**	**$2,827**	**17,301**	**$5,591**

NOTE: EFC= Expected Family Contribution.
SOURCES: Legislative Budget Board; Texas Higher Education Coordinating Board.

attend—not their financial need relative to other students in the state.

Figure 4 is another way of showing this disparity. It shows, by institution, the proportion of school year 2006–07 students in each of seven EFC bands that could have been served with the institutions school year 2010–11 TEXAS

Grant allocation. (Note that this does not predict which students actually received awards; because of institutional discretion awards may be given to families with a higher EFC than this figure assumes.)

On the high end, seven institutions received a large enough allocation to cover all of their students having an EFC of

FIGURE 4
TEXAS GRANT INITIAL AWARD DOLLARS AND PROPORTION OF ELIGIBLE FRESHMEN THAT COULD BE SERVED
2011 INITIAL GRANT ALLOCATIONS AND FALL 2006 ENTERING FRESHMEN

INSTITUTION	EFC $0	EFC $1 TO $1000	EFC $1001 TO $2000	EFC $2001 TO $3000	EFC 3001 TO $4000	EFC $4000 TO $8000	EFC GREATER THAN $8000
University of Houston - Downtown	100%	100%	100%	100%	100%	100%	100%
The University of Texas at Arlington	100%	100%	100%	100%	100%	100%	20%
The University of Texas at Dallas	100%	100%	100%	100%	100%	100%	7%
Texas Woman's University	100%	100%	100%	100%	100%	85%	
The University of Texas at Tyler	100%	100%	100%	100%	100%	84%	
Texas A&M University - Commerce	100%	100%	100%	100%	100%	71%	
University of Houston	100%	100%	100%	100%	100%	54%	
Midwestern State University	100%	100%	100%	100%	62%		
Tarleton State University	100%	100%	100%	100%	16%		
Texas A&M University - Kingsville	100%	100%	100%	87%			
The University of Texas of the Permian Basin	100%	100%	100%	67%			
Texas State University - San Marcos	100%	100%	100%	62%			
West Texas A&M	100%	100%	100%	51%			
Sam Houston State University	100%	100%	100%	41%			
The University of Texas at San Antonio	100%	100%	100%	30%			
Lamar University	100%	100%	100%				
Sul Ross State University	100%	100%	100%				
Texas Southern University	100%	100%	98%				
Texas A&M University at Galveston	100%	100%	67%				
University of North Texas	100%	100%	65%				
Stephen F. Austin State University	100%	100%	63%				
The University of Texas at El Paso	100%	100%	60%				
Texas A&M University	100%	100%	57%				
The University of Texas at Austin	100%	100%	48%				
Prairie View A&M University	100%	100%	12%				
Texas A&M International University	100%	97%					
Texas Tech University	100%	87%					
Texas A&M University - Corpus Christi	100%	79%					
Angelo State University	100%	75%					
The University of Texas - Pan American	100%	3%					

Note: EFC= Expected Family Contribution.
Sources: Legislative Budget Board; Texas Higher Education Coordinating Board.

$4,000 or less with additional funding available for students not eligible for Pell Grants. On the low end, the allocations given to five institutions allocation were insufficient to provide TEXAS Grants to students having an EFC of $1,000.

In October 2010, THECB released its proposed "Priority Model" for the award of TEXAS Grants at universities. Under this proposal, students who met any two of four criteria from the following list would "move to the front of the line" for TEXAS Grant award consideration:

- Category 1—complete 12 hours of college credit (e.g., dual credit, Advanced Placement) or graduate with the Distinguished Achievement Plan or the International Baccalaureate Program
- Category 2—achieve Texas Success Initiative Standards
- Category 3—graduate in the top one third of high school class or achieve a "B" average
- Category 4—complete a math class beyond Algebra 2

A key portion of the THECB plan is that existing institutional allocations for initial TEXAS Grant award will not change. The only change in the plan involves how universities disburse TEXAS Grants. The Priority Model requires universities to first serve those financially needy students who meet some combination of academic criteria. Once all students meeting priority status are served, and if additional funds are available, an institution can then disburse awards to students who have financial need and graduate with the default program as currently in statute.

In contrast to the THECB plan, this report models possible outcomes if TEXAS Grant allocations were allowed to vary by the proportion of needy students at an institution that met the above criteria. This approach is intended to provide the Texas Legislature an additional tool in managing overall TEXAS Grant program appropriations during the Eighty-Second Legislative Session, 2011. These criteria are referred to as "potential initial award criteria" for the remainder of the report.

ALLOCATION UNDER POTENTIAL INITIAL AWARD CRITERIA

One way to manage the growth in students both applying for financial aid as well as meeting the statutory requirements for the TEXAS Grant is to develop a new set of requirements for the award of these grants. One proposal (see the breakout box) sets up four potential standards for measuring preparation for higher education while in high school (based upon class rank, achieving Texas Success Initiative Standards, completion of a math class beyond Algebra 2, and completion

of a set amount of college credit/Distinguished Achievement Plan/International Baccalaureate). Students who meet two of four criteria would be eligible for funding under the TEXAS Grant program first. Only when these students had been funded would the broader, statutorily eligible population receive any remaining funds.

Figure 5 shows how TEXAS Grant funding per eligible student would change had this potential initial award criteria been implemented as a requirement for the TEXAS Grant in school year 2006–07. This implementation is shown both for the entire statutorily eligible population as well as for new criteria students with an EFC at or below $4,000.

Restricting TEXAS Grant awards to students meeting the potential new criteria and a $4,000 EFC cap would have significant effects on some institutions. For example, the University of Houston-Downtown would have $37,441 per new criteria student under $4,000 EFC in this scenario, an increase from $12,388 per statutorily eligible student as shown earlier. This increase is due to a reduction in the eligible population under the potential new criteria (from 272 that are statutorily eligible to 90 that would meet the new criteria standards). In contrast, the University of Texas at Austin would see a reduction in new criteria students of only 24 (from 1,510 to 1,486) and as a result little change in TEXAS Grant dollars available per student ($4,521 to $4,595).

Figure 6 again shows, by institution, the proportion of school year 2006–07 students in each of seven EFC bands that could have been served with the institutions 2010–11 TEXAS Grant allocation.

Imposing the potential initial award criteria allows 20 institutions to fully fund all new criteria freshmen with an EFC of $4,000 or less. Fourteen institutions could fund new criteria freshmen up to $8,000 EFC, while six institutions could fund all new criteria freshmen who applied for financial aid. In contrast, three institutions would have insufficient funds to award TEXAS Grants to all students at an EFC of $2,000 or less. For the $4,000 or less EFC freshman population meeting the new criteria, directing funds to these freshmen would reduce inter-institution disparity significantly.

Figure 7 shows the number of new criteria eligible students with an EFC less than $4,000 who were at each institution in school year 2006–07, the number of TEXAS Grants that the institution could fund under their fall 2011 allocation, and

FIGURE 5
TEXAS GRANT INITIAL AWARD DOLLARS PER FRESHMAN UNDER POTENTIAL INITIAL AWARD CRITERIA
2011 INITIAL GRANT ALLOCATIONS AND FALL 2006 ENTERING FRESHMEN

INSTITUTION	2011 INITIAL AWARD DOLLARS	FALL 2006 POTENTIAL INITIAL AWARDS	DOLLARS PER POTENTIAL INITIAL AWARD FRESHMAN	FALL 2006 POTENTIAL INITIAL AWARDS LESS THAN $4000 EFC	DOLLARS PER POTENTIAL INITIAL AWARD FRESHMAN WITH EFC LESS THAN $4,000
University of Houston - Downtown	$3,369,660	113	$29,820	90	$37,441
Texas A&M University - Commerce	$1,654,320	189	$8,753	88	$18,799
Texas Southern University	$3,586,620	275	$13,042	201	$17,844
Sul Ross State University	$827,160	71	$11,650	47	$17,599
Texas A&M University - Kingsville	$2,189,940	258	$8,488	145	$15,103
Prairie View A&M University	$2,766,240	302	$9,160	193	$14,333
Texas Woman's University	$2,020,440	336	$6,013	153	$13,205
Lamar University	$2,508,600	467	$5,372	201	$12,481
The University of Texas at Tyler	$1,233,960	290	$4,255	100	$12,340
The University of Texas at Arlington	$5,132,460	1,001	$5,127	447	$11,482
The University of Texas at Dallas	$1,695,000	531	$3,192	151	$11,225
University of Houston	$7,790,220	1,464	$5,321	745	$10,457
Tarleton State University	$1,891,620	563	$3,360	195	$9,701
University of Texas at El Paso	$6,061,320	937	$6,469	632	$9,591
Midwestern State University	$1,044,120	270	$3,867	109	$9,579
University of Texas of the Permian Basin	$644,100	134	$4,807	76	$8,475
West Texas A&M	$1,457,700	402	$3,626	175	$8,330
Stephen F. Austin State University	$2,956,080	1,036	$2,853	374	$7,904
Sam Houston State University	$3,145,920	928	$3,390	417	$7,544
The University of Texas at San Antonio	$6,305,400	1,929	$3,269	836	$7,542
Angelo State University	$1,518,720	547	$2,776	230	$6,603
Texas A&M University at Galveston	$203,400	91	$2,235	31	$6,561
Texas State University - San Marcos	$5,173,140	1,665	$3,107	791	$6,540
Texas A&M University - Corpus Christi	$1,905,180	659	$2,891	303	$6,288
Texas A&M International University	$1,972,980	408	$4,836	316	$6,244
The University of Texas - Pan American	$7,037,640	1,441	$4,884	1,140	$6,173
University of North Texas	$5,247,720	2,034	$2,580	898	$5,844
Texas Tech University	$3,627,300	2,201	$1,648	714	$5,080
The University of Texas at Austin	$6,827,460	3,232	$2,112	1,486	$4,595
Texas A&M University	$4,929,060	2,615	$1,885	1,115	$4,421
Statewide	**$96,723,480**	**26,389**	**$3,665**	**12,399**	**$7,801**

NOTE: EFC= Expected Family Contribution.
SOURCES: Legislative Budget Board; Texas Higher Education Coordinating Board.

FIGURE 6
TEXAS GRANT INITIAL AWARD DOLLARS AND PROPORTION OF ELIGIBLE FRESHMEN THAT COULD BE SERVED UNDER POTENTIAL INITIAL AWARD CRITERIA 2011 INITIAL GRANT ALLOCATIONS AND FALL 2006 ENTERING FRESHMEN

INSTITUTION	EFC $0	EFC $1 TO $1000	EFC $1001 TO $2000	EFC $2001 TO $3000	EFC $3001 TO $4000	EFC $4000 TO $8000	EFC GREATER THAN $8000
Prairie View A&M University	100%	100%	100%	100%	100%	100%	100%
Sul Ross State University	100%	100%	100%	100%	100%	100%	100%
Texas A&M University - Commerce	100%	100%	100%	100%	100%	100%	100%
Texas A&M University - Kingsville	100%	100%	100%	100%	100%	100%	100%
Texas Southern University	100%	100%	100%	100%	100%	100%	100%
University of Houston - Downtown	100%	100%	100%	100%	100%	100%	100%
The University of Texas at El Paso	100%	100%	100%	100%	100%	100%	79%
Texas Woman's University	100%	100%	100%	100%	100%	100%	72%
Lamar University	100%	100%	100%	100%	100%	100%	51%
The University of Texas at Arlington	100%	100%	100%	100%	100%	100%	40%
University of Houston	100%	100%	100%	100%	100%	100%	40%
The University of Texas at Tyler	100%	100%	100%	100%	100%	100%	29%
The University of Texas at Dallas	100%	100%	100%	100%	100%	100%	8%
Midwestern State University	100%	100%	100%	100%	100%	100%	3%
Tarleton State University	100%	100%	100%	100%	100%	91%	
The University of Texas of the Permian Basin	100%	100%	100%	100%	100%	83%	
West Texas A&M	100%	100%	100%	100%	100%	66%	
The University of Texas at San Antonio	100%	100%	100%	100%	100%	42%	
Stephen F. Austin State University	100%	100%	100%	100%	100%	39%	
Sam Houston State University	100%	100%	100%	100%	100%	30%	
Texas A&M University at Galveston	100%	100%	100%	100%	86%		
Angelo State University	100%	100%	100%	100%	84%		
Texas State University - San Marcos	100%	100%	100%	100%	62%		
Texas A&M University - Corpus Christi	100%	100%	100%	100%	37%		
Texas A&M International University	100%	100%	100%	52%			
University of North Texas	100%	100%	100%	49%			
The University of Texas - Pan American	100%	100%	100%	49%			
Texas A&M University	100%	100%	65%				
Texas Tech University	100%	100%	56%				
The University of Texas at Austin	100%	100%	54%				

Note: EFC= Expected Family Contribution.
Sources: Legislative Budget Board; Texas Higher Education Coordinating Board

FIGURE 7
"EXCESS" TEXAS GRANT ALLOCATIONS

	FALL 2006 POTENTIAL INITIAL AWARD FRESHMEN UNDER $4,000 EFC	POTENTIAL INITIAL AWARD FRESHMAN FUNDED UNDER 2011 ALLOCATION	EXCESS/ (DEFICIT)	PERCENTAGE OVERFUNDED/ (UNDERFUNDED)
University of Houston - Downtown	90	497	407	452.2%
Texas A&M University - Commerce	88	244	156	177.3%
Texas Southern University	201	529	328	163.2%
Sul Ross State University	47	122	75	159.6%
Texas A&M University - Kingsville	145	323	178	122.8%
Prairie View A&M University	193	408	215	111.4%
Texas Woman's University	153	298	145	94.8%
Lamar University	201	369	168	83.6%
The University of Texas at Tyler	100	182	82	82.0%
The University of Texas at Arlington	447	756	309	69.1%
The University of Texas at Dallas	151	249	98	64.9%
University of Houston	745	1,149	404	54.2%
Tarleton State University	195	278	83	42.6%
The University of Texas at El Paso	632	893	261	41.3%
Midwestern State University	109	153	44	40.4%
The University of Texas of the Permian Basin	76	95	19	25.0%
West Texas A&M	175	215	40	22.9%
Stephen F. Austin State University	374	436	62	16.6%
Sam Houston State University	417	464	47	11.3%
The University of Texas at San Antonio	836	929	93	11.1%
Angelo State University	230	224	(6)	(2.6%)
Texas State University-San Marcos	791	763	(28)	(3.5%)
Texas A&M University at Galveston	31	29	(2)	(6.5%)
Texas A&M University-Corpus Christi	303	281	(22)	(7.3%)
Texas A&M International University	316	290	(26)	(8.2%)
The University of Texas-Pan American	1,140	1,037	(103)	(9.0%)
University of North Texas	898	774	(124)	(13.8%)
Texas Tech University	714	534	(180)	(25.2%)
The University of Texas at Austin	1,486	1,006	(480)	(32.3%)
Texas A&M University	1,115	726	(389)	(34.9%)
Statewide	**12,399**	**14,253**	**1,854**	**15.0%**

NOTE: EFC= Expected Family Contribution.
SOURCES: Legislative Budget Board; Texas Higher Education Coordinating Board.

the number of grants in excess (or deficit) of this new criteria student count.

Under existing allocations, institutions would range from an overfunding level of 452.2 percent to an underfunded level of -34.9 percent. Of the 14,253 initial TEXAS Grants that would be awarded under this scenario, 3,214 (22.5 percent) would be awarded to students who did not meet the potential new award criteria and $4,000 EFC benchmarks.

Implementing the potential new award criteria along with imposition of a $4,000 EFC award cap would remove most of the inter-institutional disparity in the chance of receiving a TEXAS Grant in the current program. Because this would result in excess funds at many institutions, however, this disparity would simply be transferred to a differential chance of receiving an award among students not meeting new award criteria.

DEMOGRAPHIC AND PROGRAM COST IMPACT OF THE POTENTIAL NEW AWARD CRITERIA

This section of the report details how the potential new award criteria would impact the size of the eligible freshmen pool, predicts how the distribution of eligible population by race/ethnicity would change, and, finally, how the fiscal year 2011 initial TEXAS Grant allocation amount of $96,723,480 to the modeled institutions would cover the new criteria population.

This analysis uses the following assumptions. First only students entering public four-year institutions are included. Second, the freshman class entering in fall 2006 (the most recent year for which potential new award criteria data is

available) is used for potential eligible student count—this population is used because it is the most recent group for which eligibility under the potential new system can be assessed. Third, program coverage is assessed by determining the number of TEXAS Grants awarded by each institution to the 2011 freshman class and applying this number of grants to eligible 2006 students. This approach produces an analysis that shows what would have happened in 2006 had 2011 funding been available. The results are reported in **Figure 8**.

This report presents four estimates:

- Potential new criteria applied, EFC threshold of $4,000;

- Existing criteria applied, EFC threshold of $4,000;

- Potential new criteria applied, EFC threshold of $8,000; and

- Existing criteria applied, EFC threshold of $8,000.

The first major finding from this analysis is that restricting TEXAS Grant eligibility by the potential new criteria is a more powerful constraint on program size than restricting eligibility based upon a $4,000 EFC threshold. In other words, the program will be a naturally larger one with a threshold of $4,000 EFC and the existing criteria than it would be with an $8,000 EFC threshold and the potential new award criteria.

Second, assuming the TEXAS Grant award remains constant at its THECB-established award amount of $6,780 for school year 2010–11, one of the four scenarios above could be fully funded for initial awards under fiscal year 2011

FIGURE 8
IMPACT OF POTENTIAL TEXAS GRANT PROGRAM CHANGES ON ELIGIBLE FRESHMAN POPULATION

	ELIGIBLE FRESHMEN	BLACK STUDENTS (PERCENTAGE)	HISPANIC STUDENTS (PERCENTAGE)	NOT BLACK OR HISPANIC (PERCENTAGE)	GRANTS IN EXCESS OF FULL FUNDING	SINGLE YEAR FUNDING EXCESS/ (SHORTFALL)
Potential New Criteria, $4,000 EFC	12,399	1,947 (15.2%)	5,285 (41.1%)	5,167 (43.7%)	1,854	$12,570,120
Potential New Criteria, $8,000 EFC	15,791	2,341 (14.8%)	6,253 (39.6%)	7,197 (45.6%)	(1,538)	($10,427,640)
Existing Criteria, $4,000 EFC	17,301	3,738 (21.6%)	7,287 (42.1%)	6,276 (36.3%)	(3,048)	($20,665,440)
Existing Criteria, $8,000 EFC	21,559	4,377 (20.3%)	8,518 (39.5%)	8,664 (40.2%)	(7,306)	($49,534,680)

NOTE: EFC= Expected Family Contribution.
SOURCES: Legislative Budget Board; Texas Higher Education Coordinating Board.

allocation levels—imposition of the new criteria and a $4,000 EFC cap. This option would also reduce initial grant outlays by $12.5 million in the first fiscal year it was implemented.

Third, this analysis suggests that the pool of eligible Black students is more sharply affected by the potential initial award criteria than either White or Hispanic students. Using the potential new award criteria as a requirement for TEXAS Grant award among the freshmen with an EFC under $4,000 reduces the proportion of the eligible population that is Black from 21.6 percent to 15.2 percent. Imposition of the new criteria up to $8,000 EFC has a similar effect—a reduction of the Black population from 20.3 percent to 14.8 percent. Changes in proportional eligibility among Hispanics, on the other hand, are much smaller and confined largely to the lower EFC population—from 42.1 percent to 41.1 percent for imposition of the new criteria at the $4,000 EFC level and an increase from 39.5 percent to 39.6 percent at the $8,000 EFC level.

PREDICTORS OF SUCCESS AND THE TEXAS GRANT

Defining "success" in higher education is not completely straightforward. A variety of definitions can be used including grade point average, persistence, and accumulation of credit hours. In the end, LBB staff defined "success" as being achieved when a newly entering freshman student graduated in four, five, or six years with a bachelor's degree. **Figure 9** shows graduation and other potential outcome measurements for four-year public institutions. Of first-time, full-time freshmen who entered in fall 2004 and applied for financial aid, 50.1 percent graduated with a bachelor's degree within six years.

Factors influencing the graduation rate were examined by conducting a statistical analysis of student-level data provided by the THECB and the Texas Education Agency. Six logistic

FIGURE 9

SELECTED OUTCOME MEASURES, FIRST-TIME, FULL-TIME TEXAS FRESHMAN WITH FINANCIAL AID PACKAGES ENTERING IN FALL 2004

MEASURE	PUBLIC FOUR-YEAR INSTITUTIONS
Total students	26,612
BS/BA graduate in six years	50.1%
BS/BA graduate in four years	20.2%
Average Semester Credit Hours completed, graduates	130.3
Average Semester Credit Hours completed, non-graduates	70.1
Average student loan debt incurred, graduates	$25,136.9
Average student loan debt incurred, non-graduates	$11,938.3

NOTE: Does not include students who enrolled for less than 12 hours in the fall semester, students without a high school diploma, or students with unmatchable social security numbers.
SOURCES: Legislative Budget Board; Texas Higher Education Coordinating Board.

regression models using the measures detailed in **Figure 10** were developed to determine what factors were correlated with graduation from a Texas institution of higher education (public or private) with a bachelor's degree or higher within a four-, five-, or six-year period following first matriculation. (A full definition of these elements is contained in the appendix to this report.)

These data elements represent most of the categories of measures called for in Rider 60 with one exception—the state's higher education data collection system does not include a measure of high school grade point average (GPA). Even if such a measure were collected, however, there is such wide variation in the methods used to calculate and report GPA that the utility of an indicator variable based upon GPA would be questionable.

FIGURE 10
ASSESSED EXPLANATORY FACTORS

DEMOGRAPHIC	HIGH SCHOOL PREPARATION	HIGHER EDUCATION INSTITUTION
Family Income	Highest Math Class	TEXAS Grant in freshman year
Free/Reduced Lunch	SAT/ACT Score	Percentage of cost from grants
Student Age	Class Rank	Percentage of cost from loans
Student Gender	Texas Success Initiative Exempt	Percentage of cost from workstudy
Father's Education	High School Diploma	Percentage of cost from waivers
Mother's Education	College-level Coursework	Percentage of cost from student
Race/Ethnicity		Percentage of cost unmet
		Institution attended

SOURCES: Legislative Budget Board; Texas Higher Education Coordinating Board.

The study population for this analysis includes all Texas resident, first-time-in-college students who matriculated at a Texas public four-year institution in the school years 2004–05 to 2006–07. For these students, LBB staff then selected those who had enrolled in 12 or more semester credit hours in the fall semester of their entering year, who applied for financial aid, and for whom high school records could be accessed. Applying these constraints enabled LBB staff to analyze the largest number of explanatory variables by including data reported on financial aid forms as well as data reported from high schools.

Figure 11 shows how the size of the study population compares to the general first-time population at Texas public four-year institutions. In school year 2004-05, for example, this analysis includes 26,612 out of a total of 60,184 students.

LBB staff developed six logistic regression models using the potential explanatory factors in **Figure 12** to determine a combination that best predicted graduation rates. **Figure 12** also shows the data availability for four-, five-, and six-year graduation rates. (A model was created for each combination of graduation rate and entering year marked as "Yes" on this figure.)

The following set of figures show the explanatory factors that appeared in one or more of the regression models as well as the direction of the relationship. These factors are grouped into demographics, measures of high school preparation, and

characteristics of the higher education institution. The six columns to the right of each factor show how that specific factor influenced the model. The notation "Increases" indicates that the factor was in that specific model, was statistically significant, and had a positive effect on predicted graduation. Similarly, the notation "Decreases" indicates that factor was in that specific model, was significant, but had a negative effect on graduation. The notation "NSS" means the factor is in the model but the specific measured effect is not statistically significant. Finally, an "n/a" means that factor was not found to be an explanatory factor in that specific model.

The first group of data elements is shown in **Figure 13.** These are demographic factors measuring family income, education, gender, and race/ethnicity. Taken as a whole, these factors enable the model to control for the socioeconomic status of entering students. Three factors are common across all six models—family income, whether the student received free or reduced lunch in high school, and the education level of the student's father. Race/ethnicity of the student does not appear in all of the models (Hispanic is in five, Black is in four, and "other" is in three).

The next group of factors **(Figure 14)** measures high school academic preparation for higher education. While the demographic factors in **Figure 13** are included in the model to control for socio-economic status, this set of measures

FIGURE 11
FIRST-TIME TEXAS STUDENTS ENROLLED AT PUBLIC FOUR-YEAR COLLEGES, FALL 2004 TO 2009

ENROLLMENT TYPE	FINANCIAL AID APPLICATION	2004	2005	2006	2007	2008	2009
Full Time in Fall	Applied	26,612	27,169	27,528	34,531	36,056	39,390
	Did not apply	20,145	19,910	19,664	14,719	13,799	13,856
Less than Full Time in Fall	Applied	664	783	741	888	888	1,233
	Did not apply	700	596	599	405	497	525
Other Students		12,063	11,515	11,714	12,459	12,942	9,388
Totals		60,184	59,973	60,246	63,002	64,182	64,393

NOTE: "Other Students" includes students without a high school diploma and students with unmatchable social security numbers.
SOURCES: Legislative Budget Board; Texas Higher Education Coordinating Board.

FIGURE 12
COHORTS AND REGRESSION MODELS, SCHOOL YEARS 2004–05 TO 2006–07

ENTERING FOUR-YEAR COLLEGE	FOUR-YEAR GRADUATION	FIVE-YEAR GRADUATION	SIX-YEAR GRADUATION
2004–05	Yes	Yes	Yes
2005–06	Yes	Yes	No
2006–07	Yes	No	No

SOURCES: Legislative Budget Board; Texas Higher Education Coordinating Board.

FIGURE 13
PREDICTORS OF SUCCESS—DEMOGRAPHIC FACTORS, SCHOOL YEARS 2004–05 TO 2006–07

MEASURE	FOUR-YEAR GRADUATION RATE			FIVE-YEAR GRADUATION RATE		SIX-YEAR GRADUATION RATE
	2004	2005	2006	2004	2005	2004
Additional $10,000 in Family Income	Increases	Increases	Increases	Increases	Increases	Increases
Student received Free Lunch in High School	Decreases	Decreases	Decreases	Decreases	Decreases	Decreases
Father Education-Elementary	Decreases	Decreases	NSS	Decreases	Decreases	Decreases
Father Education-High School	Decreases	Decreases	Decreases	Decreases	Decreases	Decreases
Father Education-Unknown	Decreases	Decreases	Decreases	Decreases	Decreases	Decreases
Mother Education-Elementary	n/a	NSS	Decreases	NSS	NSS	NSS
Mother Education-High School	n/a	Decreases	Decreases	Decreases	Decreases	Decreases
Mother Education-Unknown	n/a	NSS	NSS	NSS	NSS	NSS
Male	n/a	n/a	Decreases	Decreases	n/a	Decreases
Race-Other	n/a	n/a	Increases	Increases	n/a	Increases
Race-Black	n/a	Decreases	Decreases	Decreases	Decreases	n/a
Race-Hispanic	Decreases	Decreases	Decreases	Decreases	Decreases	n/a
Age	n/a	n/a	n/a	n/a	n/a	Increases

NOTE: "NSS" indicates the factor was in the model but was not statistically significant. "N/a" indicates the factor was not included in the model. "Increases" means the factor increases the chance of graduation. "Decreases" means the factor decreases the chance of graduation.
SOURCES: Legislative Budget Board; Texas Higher Education Coordinating Board.

FIGURE 14
PREDICTORS OF SUCCESS—HIGH SCHOOL PREPARATION FACTORS, SCHOOL YEARS 2004–05 TO 2006–07

MEASURE	FOUR-YEAR GRADUATION RATE			FIVE-YEAR GRADUATION RATE		SIX-YEAR GRADUATION RATE
	2004	2005	2006	2004	2005	2004
Highest Math Class Below Algebra 2 (Y/N)	Decreases	n/a	n/a	Decreases	Decreases	n/a
Highest Math Class Above Algebra 2 (not Calculus) (Y/N)	n/a	Increases	Increases	Increases	Increases	Increases
Highest Math Class Calculus (Y/N)	n/a	Increases	Increases	Increases	Increases	Increases
Additional 100 Points of SAT	Increases	Increases	Increases	Increases	Increases	Increases
Additional 1 point of Class Rank	Increases	Increases	Increases	Increases	Increases	Increases
DAP diploma	Increases	Increases	Increases	Increases	Increases	Increases
Minimum Diploma	n/a	n/a	Decreases	n/a	n/a	n/a
No Required Developmental Education	Increases	Increases	Increases	Increases	Increases	Increases
Each College-Level Course in High School	Increases	Increases	Increases	Increases	Increases	Increases

NOTE: "NSS" indicates the factor was in the model but was not statistically significant. "N/a" indicates the factor was not included in the model. "Increases" means the factor increases the chance of graduation. "Decreases" means the factor decreases the chance of graduation.
SOURCES: Legislative Budget Board; Texas Higher Education Coordinating Board.

represent factors that are more amenable to change in public policy. There were five measures of high school academic preparation that were common across all six models: SAT score, class rank, completion of the Distinguished Achievement Plan (DAP), meeting Texas Success Initiative standards (exemption from developmental education), and completion of "college-level" coursework in high school (either Advanced Placement (AP) courses, International Baccalaureate (IB) courses, or actual dual credit awarded by local community colleges). All of these measures serve to increase the likelihood of graduation and, it needs to be emphasized, display this effect after controlling for demographic factors.

Figure 15 shows how factors related to higher education influenced graduation rates. There are two basic measures. First, the model includes the higher education institution attended. Second, the model applies the student's freshman year financial aid package as a set of predictor variables. There were two measures common in all six models: the institution attended and the proportion of a student's financial aid package met through workstudy. In addition, the proportion of a student's need that was unmet and proportion of need met through loans were in five of the six models.

The most striking finding from this set of factors is the apparent reversal in effect of the TEXAS Grant from school year 2004–05 to school year 2005–06. In 2004, 27.2 percent of TEXAS Grants went to students with an EFC of greater than $4,000. In 2005, that dropped to 1.4 percent. One possible explanation for this change in predicted effect could be that TEXAS Grant award status became a proxy for low socio-economic status. In turn, the positive effect on graduation of a TEXAS Grant award was hidden by, unmeasured, negative socio-economic factors. In other words, the positive impact of a TEXAS Grant could have been smaller than the negative impact due to unmeasured, negative socio-economic status factors.

COMPARING MODEL EFFECTS

Figure 16 shows the relative effects for a single model—the fiscal year 2004 cohort's six-year graduation rate—for each of the predictive factors in the model (with the exception of institution). The general logistic model assesses the percentage chance a student will graduate within six years taking into account all of their factors contained within the model. The percentage increase or decrease in **Figure 16** show what would happen if one variable regarding the student was

FIGURE 15
PREDICTORS OF SUCCESS—HIGHER EDUCATION FACTORS, SCHOOL YEARS 2004–05 TO 2006–07

MEASURE(S)	FOUR-YEAR GRADUATION RATE			FIVE-YEAR GRADUATION RATE		SIX-YEAR GRADUATION RATE
	2004	2005	2006	2004	2005	2004
Institution Attended	Varies	Varies	Varies	Varies	Varies	Varies
Freshman TEXAS Grant	NSS	Decreases	Decreases	Increases	Decreases	Increases
Percentage COA Loans	Decreases	Decreases	n/a	Decreases	Decreases	Decreases
Percentage COA Grants	n/a	n/a	Increases	Increases	n/a	n/a
Percentage COA Workstudy	Increases	Increases	Increases	Increases	Increases	Increases
Percentage COA Unmet	Decreases	Decreases	Decreases	n/a	Decreases	Decreases
Percentage COA EFC	Decreases	Decreases	n/a	n/a	Decreases	n/a
Percentage COA Waiver	n/a	n/a	n/a	n/a	n/a	n/a

NOTE: "COA" means Cost of Attendance. "NSS" indicates the factor was in the model but was not statistically significant. "N/a" indicates the factor was not included in the model. "Increases" means the factor increases the chance of graduation. "Decreases" means the factor decreases the chance of graduation.
SOURCES: Legislative Budget Board; Texas Higher Education Coordinating Board.

FIGURE 16
RELATIVE POWER OF STATISTICALLY SIGNIFICANT PREDICTIVE FACTORS, 2004 COHORT, SIX-YEAR GRADUATION MODEL

CHANGE IN PREDICTIVE FACTOR	PERCENTAGE INCREASE/(DECREASE)
10% of financial aid package in workstudy	105.3%
Race-Other (compared to Race-White)	71.9%
Exempt from developmental education	**40.8%**
Completion of DAP	**33.4%**
TEXAS Grant in freshman year	32.5%
Highest math class Calculus instead of Algebra 2	**29.8%**
10 percent change in class rank	**22.0%**
Completed a math class above Algebra 2 but below Calculus	**21.6%**
400 additional SAT points	19.2%
One year older	12.4%
1 college-level course in high school	**2.9%**
Additional 10,000 in family income	1.7%
10 percent of financial aid package in loans	(4.4%)
10 percent of financial aid unmet	(6.8%)
Mother's education high school graduate (compared to college graduate)	(13.6%)
Father's education high school graduate (compared to college graduate)	(27.3%)
Free or reduced lunch in high school	(28.0%)
Father's education unknown (compared to college graduate)	(31.1%)
Father's education elementary school (compare to college graduate)	(38.9%)

NOTE: High school preparation elements are in **bold.**
SOURCES: Legislative Budget Board; Texas Higher Education Coordinating Board.

changed. For example, assume the model predicts a given student has a 55 percent chance of graduation but requires developmental education in college. If the student, instead, is exempt from developmental education while all other factors remained constant this would result in an increase in predicted chance of graduation to 77 percent (55 percent multiplied by 1.408).

Workstudy award is the most powerful predictor of success in all models. A financial aid package with a modest 10 percent workstudy award in the freshman year would be the single largest predictor of success of any factor studied. These effects, however, also have a wide range of statistical significance within the model so this result should be treated with caution. Receipt of a TEXAS grant in the freshman year is also a predictor of success.

The potential new award criteria are in bold in **Figure 16.** All are significant predictors of success, with exemption from developmental education being a particularly strong predictor of success.

In these models, institutional effects were measured by selecting the University of Texas at Austin as a reference institution. Other institutions were then compared to this institution as a reference point. Holding everything else constant (e.g., class rank, family income, unmet need) other institutions can be grouped as either statistically different than the reference point (higher or lower graduation rates) or statistically indistinguishable. **Figure 17** shows this comparison for the 2004 cohort six-year graduation rate model.

Overall, after controlling for academic preparation, demographic factors, and financial aid, eight of 27 institutions included in this analysis were statistically indistinguishable from UT Austin in their effect on graduation rates for students in the school year 2004 cohort. Three of these institutions had both significantly higher effects on graduation than UT Austin in some models and no significantly lower effects in any other model: Texas Tech University (significantly higher in five of six models), the University of Texas at Dallas (significantly higher in three of six models), and Texas A&M University (significantly higher

FIGURE 17
INSTITUTIONAL EFFECTS OF SIX-YEAR GRADUATION RATE MODEL, FISCAL YEAR 2004

ABOVE UT AUSTIN	INDISTINGUISHABLE FROM UT AUSTIN	BELOW UT AUSTIN
None	Sam Houston State University	Angelo State University
	Texas State University	Lamar University
	Texas A&M University	Midwestern State University
	Texas A&M University-Galveston	Prairie View A&M University
	Texas A&M University at Commerce	Stephen F. Austin University
	Texas Tech University	Sul Ross State University
	Texas Woman's University	Tarleton State University
	The University of Texas at Dallas	Texas A&M International
		Texas A&M-Kingsville University
		Texas Southern University
		University of Houston
		University of Houston - Downtown
		The University of Texas at Arlington
		The University of Texas El Paso
		The University of Texas of the Permian Basin
		The University of Texas Pan American
		The University of Texas at San Antonio
		West Texas A&M University
		Texas A&M Corpus Christi

NOTE: University of North Texas, University of Texas at Brownsville and University of Texas at Tyler not included due to missing data, generally no rank in high school reported by the institution. Texas A&M at Texarkana, University of Houston–Clear Lake and University of Houston–Victoria are not included because they were upper-level institutions in school year 2004–05 and thus did not enroll freshmen.
SOURCES: Legislative Budget Board; Texas Higher Education Coordinating Board data.

in one of six models). On the other hand, eight institutions had statistically lower effects than the University of Texas at Austin in all six models: Lamar University, Midwestern State University, Texas A&M-Kingsville, Texas Southern University, University of Texas at Arlington, University of Texas El Paso, University of Texas at San Antonio, and the University of Houston-Downtown.

The institution variable in these logistic models captures a wide variety of effects and should be treated with caution. For example, institutions might be more or less effective in student retention due to specific programs or policies they have implemented. There are other, structural factors that might come into play however. For example, the dataset used does not record whether a student lived off campus or in a residence hall. There is another, more subtle, possibility. There is no variable in the dataset that measures how interested, how excited a student is to go to university in general and it is possible that this student interest, not captured by any variable in the model, varies by institution.

This statistical analysis above details how various factors predicted success in college graduation among first-time, full-time students attending Texas public four-year institutions who applied for financial aid. This last condition is potentially troublesome for drawing broader conclusions from the population. For example, there could be significant differences between this population and those students who did not apply for aid.

ANALYSIS OF ALL STUDENTS

LBB staff also examined these potential differences by modeling only those variables available to all students in the dataset—this removed all financial aid variables as well as all family socio-economic status variables except for free/reduced lunch in high school from the dataset. Without these variables, race, ethnicity, and gender became significant predictive factors in all models, suggesting that much of the lower levels of college success sometimes associated with students who are Black, Hispanic, and/or male could be attributable to economic or parental education instead. The

predictive effects of high school preparation, on the other hand, remained relatively consistent. For these reasons, the use of the more limited population in making general inferences seems reasonable.

CHANGES IN PREDICTORS OF SUCCESS

The previous section showed that high school preparation and freshman financial aid awards are predictive factors for graduation with a bachelor's degree. This section examines how these measures changed between 2004 and 2009.

The proportion of students who enter college meeting all three Texas Success Initiative standards (and as a result avoiding developmental education requirements) increased during the study period from 74.8 percent to 78.1 percent. **Figure 18** shows these changes. There has also been an increase in the proportion of students meeting two of three requirements, from 10.7 percent to 12.1 percent.

The proportion of students taking a math class beyond Algebra 2 also increased during the study period while the proportion of the class entering not completing Algebra 2 dropped. **Figure 19** demonstrates these changes.

The type of high school diploma has shifted upwards. Only 1.5 percent of entering freshmen in 2009 had a minimum diploma, down from 9.6 in 2004. There has been a large increase in the most rigorous high school diploma level, the Distinguished Achievement Plan, from 15.5 percent in 2004 to 25.7 percent in 2009. **Figure 20** also shows that the proportion of students completing the Recommended High School Program (RHSP) or RHSP plus an additional math class (analogous to new RHSP standard that is in place for the high school Class of 2011) has remained relatively constant.

First-time, full-time freshmen have taken a greater number of college-level courses (Advanced Placement, International Baccalaureate, or dual credit) while in high school. From school years 2004 to 2008, the average number of college level courses completed per student increased from 2.5 to 3.8, with most of this growth occurring in Advanced Placement. **Figure 21** shows these changes.

From school years 2004 to 2009, the proportion of freshmen who applied for financial aid receiving a TEXAS Grant increased from 43.6 percent to 50.0 percent. This increase was concentrated in the neediest applicants—Pell Grant recipients who also received a TEXAS Grant increased from

FIGURE 18

ENTERING WITH DEVELOPMENTAL EDUCATION REQUIREMENTS, FULL-TIME TEXAS FRESHMAN WITH FINANCIAL AID PACKAGES AT GENERAL ACADEMIC INSTITUTIONS, FISCAL YEARS 2004 TO 2008

	2004	2005	2006	2007	2008
Met all developmental education standards	74.8	70.2	65.7	74.4	78.1
Met two of three standards	10.7	12.3	15.9	14.0	12.1
Met one standard	7.8	8.6	9.4	6.2	5.5
Met no standards	6.7	8.9	9.1	5.5	4.3

NOTE: Does not include students who enrolled for less than 12 hours in the fall semester, students without a high school diploma, or students with unmatchable social security numbers.
SOURCES: Legislative Budget Board; Texas Higher Education Coordinating Board.

FIGURE 19

HIGHEST LEVEL MATHEMATICS CLASS COMPLETED IN HIGH SCHOOL, FULL-TIME TEXAS FRESHMAN WITH FINANCIAL AID PACKAGES AT GENERAL ACADEMIC INSTITUTIONS, FISCAL YEARS 2004 TO 2009

	2004	2005	2006	2007	2008	2009
Less than Algebra 2	8.4	5.1	3.4	2.7	2.6	2.4
Algebra 2	32.4	32.8	32.0	30.1	27.7	26.6
Higher than Algebra 2, Less than Calculus	36.1	37.8	38.5	39.8	41.1	39.6
Calculus	21.8	23.1	24.9	26.6	27.9	27.4

NOTE: Does not include students who enrolled for less than 12 hours in the fall semester, students without a high school diploma, or students with unmatchable social security numbers.
SOURCES: Legislative Budget Board; Texas Higher Education Coordinating Board.

FIGURE 20

HIGH SCHOOL DIPLOMA TYPE, FULL-TIME TEXAS FRESHMAN WITH FINANCIAL AID PACKAGES AT GENERAL ACADEMIC INSTITUTIONS, FISCAL YEARS 2004 TO 2009

	2004	2005	2006	2007	2008	2009
Minimum	9.6	6.0	4.2	2.8	2.2	1.5
RHSP	46.5	46.2	46.2	44.2	41.9	43.0
RHSP + upper level math class	28.4	30.2	30.6	30.8	31.5	29.8
DAP	15.5	17.6	19.0	22.2	24.4	25.7

NOTE: Does not include students who enrolled for less than 12 hours in the fall semester, students without a high school diploma, or students with unmatchable social security numbers.
SOURCES: Legislative Budget Board; Texas Higher Education Coordinating Board.

FIGURE 21

ADVANCED PLACEMENT, INTERNATIONAL BACCALAUREATE, AND DUAL CREDIT COMPLETION IN HIGH SCHOOL, FULL-TIME TEXAS FRESHMAN WITH FINANCIAL AID PACKAGES AT GENERAL ACADEMIC INSTITUTIONS, FISCAL YEARS 2004 TO 2008

	AVERAGE COURSES PER STUDENT				
	2004	2005	2006	2007	2008
Advanced Placement courses	1.7	2.0	2.2	2.4	2.5
International Baccalaureate courses	0.0	0.0	0.0	0.1	0.1
Dual credit courses*	0.7	0.8	1.0	1.1	1.3
Total average "college-level" courses	2.5	2.8	3.2	3.5	3.8

NOTE: Does not include students who enrolled for less than 12 hours in the fall semester, students without a high school diploma, or students with unmatchable social security numbers *Note: dual credit hours completed were divided by three to approximate a standard three hour college course.
SOURCES: Legislative Budget Board; Texas Higher Education Coordinating Board.

51.7 percent to 78.2 percent while the proportion of the very neediest students—those with a zero assessed Expected Family Contribution—receiving a TEXAS Grant increased from 54.3 percent to 77.0 percent. **Figure 22** shows these changes.

To summarize, then, all of the indicators of high school preparation associated with higher levels of graduation have increased since school year 2004. In addition, the financial aid packages offered to entering students have remained roughly similar. The conclusion is that we expect to see higher levels of graduation among the school year 2009 entering cohort than the 50.1 percent average achieved by the school year 2004 cohort.

FIGURE 22

PERCENTAGE OF ENTERING FRESHMAN RECEIVING TEXAS GRANT, FULL-TIME TEXAS FRESHMAN WITH FINANCIAL AID PACKAGES, FISCAL YEARS 2004 TO 2009

	2004	2005	2006	2007	2008	2009
All Financial Aid Applicants	43.6 %	40.4%	40.6%	32.9%	43.5%	50.0%
Pell Grant Recipients	51.7	60.5	61.8	53.9	69.0	78.2
Full Pell Grant Students	54.3	63.1	65.0	57.4	69.7	77.0

NOTE: Does not include students who enrolled for less than 12 hours in the fall semester, students without a high school diploma, or students with unmatched social security numbers.
SOURCES: Legislative Budget Board; Texas Higher Education Coordinating Board.

APPENDIX

METHODOLOGY

Factors influencing the graduation rate were examined by conducting a statistical analysis of student-level data provided by the Texas Higher Education Coordinating Board and the Texas Education Agency. Six logistic regression models using the measures detailed in Figure 10 were developed to determine what factors were correlated with graduation from a Texas institution of higher education (public or private) with a bachelor's degree or higher within a four-, five-, or six-year period following first matriculation.

The basic study population for this analysis includes all Texas resident, first-time-in-college students who matriculated in the fall at a Texas public four-year institution in school years 2004 through 2006. The population was then restricted to those students who had enrolled in 12 or more semester credit hours in the fall semester of their entering year, who applied for financial aid, and for whom high school records could be accessed. These restrictions were put into place to ensure the largest number of explanatory variables possible could be included in the model by including data reported on financial aid forms as well as data reported from high schools. The potential explanatory variables were placed in three categories: demographic, high school preparation, and higher education institution.

DEMOGRAPHIC VARIABLES

- Family Income
- Free/Reduced Lunch (as determined in high school) (Yes=1)
- Student Age
- Student Gender (Male=1)
- Father's Education (as reported by student and compared to college graduate) (Number 1=Less than high school, 2= high school, 4= unknown)
- Mother's Education (as reported by student)
- Race/Ethnicity (as reported by student, compared to White)

HIGH SCHOOL PREPARATION VARIABLES

- Highest Math Class Completed
- SAT/ACT Score (ACT score converted to SAT equivalent)
- Class Rank
- Texas Success Initiative (Meeting TSI exempts the student from developmental education)
- High School Diploma Type (Minimum, Recommended High School Program, or Distinguished Achievement Plan)
- College-level Coursework in high school (completion of dual credit, AP courses, or the International Baccalaureate diploma)

HIGHER EDUCATION INSTITUTION

- Receipt of TEXAS Grant in freshman year (later grants not considered)
- Percentage of cost from grants (Grants divided by Cost of Attendance)
- Percentage of cost from loans (Loans divided by Cost of Attendance)
- Percentage of cost from workstudy (Workstudy divided by Cost of Attendance)
- Percentage of cost from waivers (Waivers divided by Cost of Attendance)
- Percentage of cost from student (Expected Family Contribution divided by Cost of Attendance)
- Percentage of cost unmet (Unmet Need divided by Cost of Attendance)
- Higher Education Institution attended (baseline institution UT Austin)

These variables were then placed into a logistic regression program that used a Schwartz-Bayesian Criteria approach to select explanatory variables to be included in the model. A separate model was created for each combination of graduation rate (four, five, and six years) and entering class (fall 2004, fall 2005, and fall 2006). A total of six models were constructed.

MODEL 1. SIX-YEAR GRADUATION MODEL, FALL 2004 ENTERING COHORT

INDEPENDENT VARIABLES	LOGIT COEFFICIENT	STANDARD ERROR
Income (per $10,000)	0.0164**	0.00625
Free-Reduced Lunch in high school	-0.3284***	0.0432
Age at Matriculation	0.1166**	0.0436
Male	-0.3059***	0.0349
Father's education less than high school	-0.4926***	0.0723
Father's education high school graduate	-0.3183***	0.0418
Father's education unknown	-0.3726***	0.0609
Mother's education less than high school	-0.0256	0.0717
Mother's education high school graduate	-0.1459***	0.0401
Mother's education unknown	-0.0968	0.0671
Other Race (Not White)	0.5419***	0.0763
High school math class above Algebra 2 but less than calculus	0.2609***	0.0547
High school math class calculus	0.2609***	0.0547
SAT score (per 100 points)	0.0472***	0.0141
Class rank (per 1 percent)	0.0222***	0.00108
Distinguished Achievement Plan graduate	0.2879***	0.0519
Met all developmental education requirements	0.3421***	0.0509
College level coursework in high school (per course)	0.0283***	0.00744
TEXAS Grant as freshman	0.2813***	0.0394
Percent of Cost of Attendance covered by loans (per percentage point)	-0.008278***	0.001211
Percent of Cost of Attendance covered by workstudy (per percentage point)	0.023538***	0.004459
Percent of Cost of Attendance unmet by aid (per percentage point)	-0.011397***	0.001017
Institution	Varies	Varies
Constant	-3.6701***	0.8177

N = 19,613
χ^2 (df=56) = 4,682.4058
Pseudo R=.31
% Correctly Predicted = 78.2
ROC =.78

***p<.001; **p<.01
Sources: Legislative Budget Board; Texas Higher Education Coordinating Board.

MODEL 2. FIVE-YEAR GRADUATION MODEL, FALL 2004 ENTERING COHORT

INDEPENDENT VARIABLES	LOGIT COEFFICIENT	STANDARD ERROR
Income (per $10,000)	0.0317***	0.0077
Free-Reduced Lunch in high school	-0.3193***	0.0466
Male	-0.3440***	0.0353
Father's education less than high school	-0.4642***	0.0751
Father's education high school graduate	-0.2998***	0.0417
Father's education unknown	-0.3566***	0.0630
Mother's education less than high school	0.02432	0.0747
Mother's education high school graduate	-0.1098**	0.0403
Mother's education unknown	-0.0424	0.0698
Black	-0.1429*	0.0637
Hispanic	-0.1937***	0.0498
Other Race (not White)	0.3194***	0.0761
High school math class below Algebra 2	-0.1916*	0.0829
High school math class above Algebra 2 but less than calculus	0.1441***	0.0428
High school math class calculus	0.2309***	0.0.555
SAT score (per 100 points)	0.0556***	0.0145
Class rank (per 1 percent)	0.0237***	0.00117
Distinguished Achievement Plan graduate	0.3179***	0.0497
Met all developmental education requirements	0.3749***	0.0552
College level coursework in high school (per course)	0.0293***	0.00722
TEXAS Grant as freshman	0.1800***	0.0455
Percent of Cost of Attendance covered by grants (per percentage point)	0.003470**	0.1141
Percent of Cost of Attendance covered by loans (per percentage point)	-0.007296***	0.001289
Percent of Cost of Attendance covered by workstudy (per percentage point)	0.023812***	0.004466
Percent of Cost of Attendance unmet by aid (per percentage point)	-0.009828***	0.001099
Institution	Varies	Varies
Constant	-2.3793***	0.2034

N = 19,613
χ^2 (df=52) = 5,441.6704
Pseudo R=.32
% Correctly Predicted = 78.9
ROC = .79

***p<.001; **p<.01; *p<.05
SOURCES: Legislative Budget Board; Texas Higher Education Coordinating Board.

MODEL 3. FOUR-YEAR GRADUATION MODEL, FALL 2004 ENTERING COHORT

INDEPENDENT VARIABLES	LOGIT COEFFICIENT	STANDARD ERROR
Income (per $10,000)	0.0296***	0.0078
Free-Reduced Lunch in high school	-0.2864***	0.0577
Male	-0.5444***	0.0420
Father's education less than high school	-0.3668***	0.0868
Father's education high school graduate	-0.2685***	0.0448
Father's education unknown	-0.2583***	0.0683
Hispanic	-0.2031***	0.0545
High school math class below Algebra 2	-0.3029*	0.1200
SAT score (per 100 points)	0.1303***	0.0159
Class rank (per 1 percent)	0.0266***	0.00159
Distinguished Achievement Plan graduate	0.3959***	0.0500
Met all developmental education requirements	0.4512***	0.0808
College level coursework in high school (per course)	0.0529***	0.00730
TEXAS Grant as freshman	0.0666	0.04529
Percent of Cost of Attendance covered by loans (per percentage point)	-0.010951***	0.001633
Percent of Cost of Attendance covered by workstudy (per percentage point)	0.018921***	0.005217
Percent of Cost of Attendance unmet by aid (per percentage point)	-0.011093***	0.001571
Percent of Cost of Attendance met by Expected Family Contribution (per percentage point)	-0.003742**	0.001228
Institution	Varies	Varies
Constant	-4.4488***	0.2440

N = 19,613
χ^2 (df=45) = 4,034.0625
Pseudo R=.29
% Correctly Predicted = 79.7
ROC = .80

***p<.001; **p<.01; *p<.05
SOURCES: Legislative Budget Board; Texas Higher Education Coordinating Board.

MODEL 4. FIVE-YEAR GRADUATION MODEL, FALL 2005 ENTERING COHORT

INDEPENDENT VARIABLES	LOGIT COEFFICIENT	STANDARD ERROR
Income (per $10,000)	0.0374***	0.00775
Free-Reduced Lunch in high school	-0.3334***	0.0436
Male	-0.4880***	0.0334
Father's education less than high school	-0.2958***	0.0718
Father's education high school graduate	-0.2231***	0.0392
Father's education unknown	-0.3506***	0.0609
Mother's education less than high school	-0.0508	0.0717
Mother's education high school graduate	-0.1442***	0.0379
Mother's education unknown	-0.0416	0.0701
Hispanic	-0.1749***	0.0449
Other Race (not White)	0.3178***	0.0700
High school math class below Algebra 2	-0.3719***	0.1052
High school math class above Algebra 2 but less than calculus	0.2113***	0.0404
High school math class calculus	0.3505***	0.0.526
SAT score (per 100 points)	0.0510***	0.0139
Class rank (per 1 percent)	0.0203***	0.00106
Distinguished Achievement Plan graduate	0.3919***	0.0456
Met all developmental education requirements	0.3603***	0.0465
College level coursework in high school (per course)	0.0209**	0.00661
TEXAS Grant as freshman	-0.1345**	0.0497
Percent of Cost of Attendance covered by loans (per percentage point)	-0.012572***	0.001292
Percent of Cost of Attendance covered by workstudy (per percentage point)	0.019620***	0.004371
Percent of Cost of Attendance unmet by aid (per percentage point)	-0.015814***	0.001258
Percent of Cost of Attendance met by Expected Family Contribution (per percentage point)	-0.007137***	0.001158
Institution	Varies	Varies
Constant	-1.4588***	0.1928

N = 21,123
χ^2 (df=51) = 5,287.8497
Pseudo R=.30
% Correctly Predicted = 77.6
ROC = .78

***$p<.001$; **$p<.01$
Sources: Legislative Budget Board; Texas Higher Education Coordinating Board.

MODEL 5. FOUR-YEAR GRADUATION MODEL, FALL 2005 ENTERING COHORT

INDEPENDENT VARIABLES	LOGIT COEFFICIENT	STANDARD ERROR
Income (per $10,000)	0.0176*	0.00790
Free-Reduced Lunch in high school	-0.2360***	0.0538
Male	-0.7122**	0.0398
Father's education less than high school	-0.2697***	0.0881
Father's education high school graduate	-0.1683***	0.0444
Father's education unknown	-0.2691***	0.0742
Mother's education less than high school	-0.0140	0.0876
Mother's education high school graduate	-0.1379**	0.0432
Mother's education unknown	-0.0932	0.0853
Black	-0.2275***	0.0692
Hispanic	-0.2677***	0.0529
SAT score (per 100 points)	0.1274***	0.0157
Class rank (per 1 percent)	0.0212***	0.00139
Distinguished Achievement Plan graduate	0.4095***	0.0462
Met all developmental education requirements	0.5043***	0.0646
College level coursework in high school (per course)	0.0584***	0.00675
TEXAS Grant as freshman	-0.3105	0.0569
Percent of Cost of Attendance covered by loans (per percentage point)	-0.011676***	0.001440
Percent of Cost of Attendance covered by workstudy (per percentage point)	0.017682***	0.005013
Percent of Cost of Attendance unmet by aid (per percentage point)	-0.015864***	0.001482
Percent of Cost of Attendance met by Expected Family Contribution (per percentage point)	-0.006805**	0.001246
Institution	Varies	Varies
Constant	-3.3807***	0.2318

N = 21,123
χ^2 (df=48) = 4,483.9491
Pseudo R=.29
% Correctly Predicted = 79.4
ROC = .80

***p<.001; **p<.01; *p<.05
SOURCES: Legislative Budget Board; Texas Higher Education Coordinating Board.

MODEL 6. FOUR-YEAR GRADUATION MODEL, FALL 2006 ENTERING COHORT

INDEPENDENT VARIABLES	LOGIT COEFFICIENT	STANDARD ERROR
Income (per $10,000)	0.0348***	0.00608
Free-Reduced Lunch in high school	-0.3741***	0.0519
Male	-0.7797**	0.0385
Father's education less than high school	-0.1596	0.0815
Father's education high school graduate	-0.2115***	0.0718
Father's education unknown	-0.2328**	0.0718
Mother's education less than high school	-0.2649**	0.0867
Mother's education high school graduate	-0.1690***	0.0413
Mother's education unknown	-0.1648	0.0847
Black	-0.3059***	0.0651
Other Race (not White)	0.2470***	0.0729
High school math class above Algebra 2 but less than calculus	0.2146***	0.0488
High school math class calculus	0.2177***	0.0586
SAT score (per 100 points)	0.1275***	0.0159
Class rank (per 1 percent)	0.0186***	0.00132
Minimum High School diploma	-0.3156*	0.1459
Distinguished Achievement Plan graduate	0.3392***	0.0453
Met all developmental education requirements	0.3523***	0.0544
College level coursework in high school (per course)	0.0519***	0.00645
TEXAS Grant as freshman	-0.1849**	0.0609
Percent of Cost of Attendance covered by grants (per percentage point)	0.007405**	0.1202
Percent of Cost of Attendance covered by workstudy (per percentage point)	0.030662***	0.004993
Percent of Cost of Attendance unmet by aid (per percentage point)	-0.003631***	0.001143
Institution	Varies	Varies
Constant	-4.1164***	0.2106

N = 21,562
χ^2 (df = 51) = 4,547.3612
Pseudo R=.28
% Correctly Predicted = 78.8
ROC = .80

***p<.001; **p<.01; *p<.05
Sources: Legislative Budget Board; Texas Higher Education Coordinating Board.