ProPelled: The Effects of Grants on Graduation, Earnings, and Welfare

Online Appendix: Not for Publication

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Appendix A: Federal and Texas Financial Aid Programs

This appendix provides additional information about federal and state financial aid programs that potentially provided financial support to students in our analysis sample. All students must fill out a Free Application for Federal Student Aid (FAFSA) to qualify for any federal student aid. Many, but not all federal aid programs depend on a student's expected family contribution (EFC), which is the federal government's measure of their family's ability to pay for college.

A.1 Federal grant programs

The Pell Grant Program is the largest source of federal student grant aid. Only students with an EFC below a year-specific eligibility threshold qualify for Pell Grant aid, which is increasing as EFC decreases, up to the maximum award, which is only provided to students with a $0 EFC. The Department of Education publishes the Pell Grant award schedule in advance of each academic year.[1] Figure C.1 displays the maximum Pell Grant award (in nominal terms) between 2005 and 2017.

First and second year students in the cohorts we examine could also qualify for the federal Academic Competitiveness Grant (ACG) in their first and/or second years if they had completed a "rigorous secondary school program" and received a Pell Grant. The maximum ACG was $750 for first year students and $1300 for second year students. Upper level students could potentially qualify for the Science and Mathematics Access to Retain Talent (SMART) Grant, which was available to Pell Grant recipients with a 3.0 GPA that

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[1]See https://ifap.ed.gov/dpcletters/attachments/1718PellPaymentDisbursementSchedules.pdf for the most recent schedule (AY 2018).

were majoring in Science, Technology, Engineering, Mathematics and foreign languages during their junior and senior year. SMART Grant recipients could receive $2000 per semester for up to four semesters. Both the ACG and SMART Grant Programs were discontinued in 2012.

A.2 Federal loan programs

The primary source of loan aid provided to undergraduates by the federal government comes from the Stafford Loan Program. Prior to 2010, schools could participated in one or both of two parallel federal lending programs: the William D. Ford Federal Direct Loan Program and the Federal Family Education Loan (FFEL) Program. FFEL loans were originated by by private lenders and guaranteed by the federal government. The 2010 Health Care and Education Reconciliation Act abolished the FFEL program. Most public bachelor's degree granting institutions in Texas participated in the FFEL Program before 2010.[2] We observe both FFEL and Direct Loans and from a student's perspective, the two programs were interchangeable.

Undergraduate students can potentially access Perkins and Parent PLUS loans. Perkins Loans are campus-based loans that schools can provide to students with exceptional financial need, but not all students with unmet need receive Perkins Loan offers due to limited program funding. PLUS loans are available to credit-worthy parents of students. If a parent is denied PLUS loans due to "an adverse credit history," their dependent student is eligible to borrow additional unsubsidized loans. Parents deemed credit-worth can borrow up to their student's cost of attendance.

Stafford loans have annual and lifetime borrowing limits. Annual borrowing limits were lower in 2008 than in later years. Specifically, dependent undergraduate students whose parents were not denied a PLUS loan could borrow up to $3500. In 2009, such students could borrow up to $5500. Students whose parents were denied a PLUS loan were eligible to borrow an additional $4000 in 2008 and an additional $6000 in 2009 and later years. Dependent students who are considered to be in their second year for federal loan eligibility purposes with unmet need can borrow up to $4,500 in subsidized loans, while students in their third year and above (i.e., those who have accumulated at least 60 credits) who have unmet need can borrow up to $5,500. The overall borrowing limits dependent students face are $6,500 in their second year and $7,500 as upper years ($3,500 and $5,500, respectively, prior to fall 2008), while independent students can borrow up to $10,500 in their second year and $12,500 in their third year and beyond ($7,500 and $10,500, respectively, prior to fall 2008). Students are limited in the total amount of federal debt they can incur during their undergraduate education. Dependent students can borrow up to $31,000 overall ($23,000 subsidized) and independent students can borrow up to $57,500 ($23,000 subsidized).[3]

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[2]In 2008, Texas A&M University at Commerce was the only four-year public institution in Texas offering Direct Loans.
[3]See studentaid.ed.gov/types/loans for additional details.

An individual student's subsidized loan eligibility may be less than the amounts described above. According to the Department of Education's Federal Student Aid Handbook, a school cannot package a subsidized loan that exceeds a student's unmet need, which is equal to the cost of attendance minus EFC and other financial assistance (grants and work-study). Unsubsidized loans can be used to replace EFC. Thus, unsubsidized loans eligibility is limited to be no more than the total cost of attendance minus other financial assistance and subsidized loans.

The interest rate on unsubsidized loans was a constant 6.8 percent over the 2008 through 2011 academic years. Unsubsidized loans start incurring interest immediately, while subsidized loans do not accrue interest as long as the borrower has at least half-time enrollment (6 or more credits attempted in a given semester). The interest rate for subsidized loans after the borrower enters repayment by graduating or dropping below half-time attendance ranged from 6.8 percent in 2008 to 4.5 percent in 2011. The federal government also charges borrowers an origination fee. This amount is deducted from the loan prior to disbursement (e.g., in 2011, a student borrowing $3500 would receive funds equal to $3465). Origination fees dropped from 3 percent in 2007 to 1 percent in 2011.

A.3 Texas financial aid programs

The largest source of state grant aid is TEXAS (Towards EXcellence, Access and Success) Grant program. The TEXAS Grant provides need-based grants to students who have financial need, as determined by the federal EFC, graduated with a recommended high school diploma, and entered higher education in Texas within 16 months of graduation. TEXAS Grant recipients may renew their grant if they maintain a 2.5 GPA, complete 24 credit hours a year, meet financial need requirements, and complete 75 percent of attempted credit hours. Only first year students can qualify for a TEXAS Grant, but students who qualify in their first year of college can receive awards for up to 5 years. The maximum award amount is the statewide average of a student's tuition and required fees (Texas Higher Education Coordinating Board 2011a). Schools must make up any difference between tuition and fees less federal aid and TEXAS Grants with institutional funds. This provides an incentive for schools to target students who are already receiving large amounts of federal aid when selecting TEXAS grant recipients.

Students enrolled in four-year public institutions may also qualify for Texas Public Educational Grant (TPEG) aid if they have financial need (as determined by institutions) but eligibility is not mechanically linked to EFC. TPEG is not funded by the state; it is a "set-aside" program under which institutions are required to use a portion of their tuition revenue to fund financial aid.[4] Over the 2008 academic year, students received $92 million dollars in TPEG aid (Texas Higher Education Coordinating Board 2009). The

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[4]For additional details, see subchapters B, C, and D of the Texas Student Financial Assistance Act of 1975.

entry cohorts we examine could also qualify for the Texas Top 10 Percent Scholarship if they demonstrated financial need and graduated in the top 10 percent of their high school class. In 2010, total disbursements from the Texas Top 10 Percent scholarship equaled $20 million (Texas Higher Education Coordinating Board 2011b). The Top 10 Percent Scholarship is currently being phased out. Only renewal students are eligible to receive funding, and 2018 is the last year that any sizable number of students will qualify for aid.

Texas has one state loan programs of note, College Access Loans. College Access Loans require that students or cosigners meet credit requirements and students may borrow up to their total cost of attendance less other financial aid (federal and state grants plus federal loans). A second quasi-loan program (Texas B-On-Time Loans) does not have financial need requirements, and balances on this loan are forgiven if students finish their degree within four calendar years of starting or within six credit hours of the required total for the degree.

The state has other smaller grants and loans which target specific populations. For instance, the Texas Armed Services Scholarship Program is a limited scholarship to students appointed by the governor, lieutenant governor, state senators, or state representatives that is a scholarship for ROTC students.

# Appendix B: Additional Figures and Tables

Figure B.1: Trends in the Automatic Zero EFC Cut-Off and Maximum Pell Grant
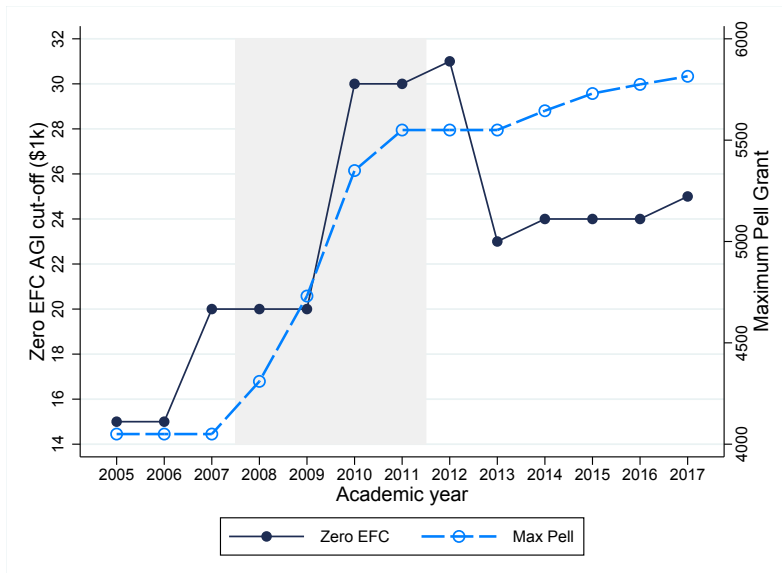
*Note*s: Markers indicate the nominal value of the maximum Pell Grant (light blue hollow circles) and the nominal value of the AGI cut-off for automatic zero EFC eligibility (navy circles) for the specified academic year. The gray shaded area represents the academic years over which students in the analysis sample were enrolled in college.

Figure B.2: Number of Students Attending Four-Year Colleges by Distance to the Automatic Zero EFC Threshold

*First-time-in-college students*
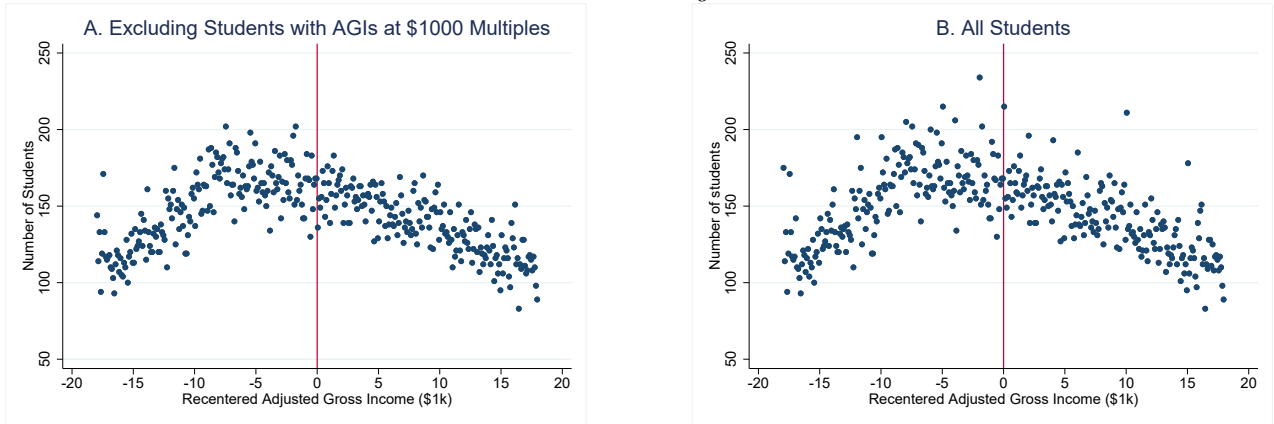
Returning students
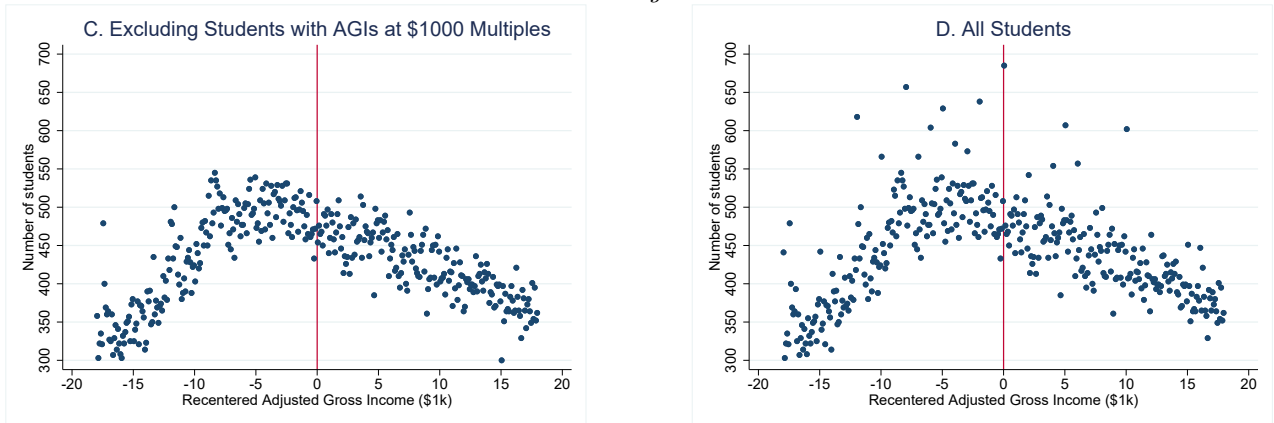
*Note*s: Sample in Panels A and B (C and D) include first-time (returning) dependent undergraduate students who enrolled in a four-year Texas public institution in 2008 through 2011 and whose family AGI fell within $18,000 of the eligibility threshold for an automatic zero EFC. Students with AGIs at $1000 intervals are excluded in Panels A and C. Each marker represents the number of students within a given $100 bin.

Figure B.3: Short-Run Academic and Financial Outcomes by Distance to the Automatic Zero EFC Threshold: Returning Students
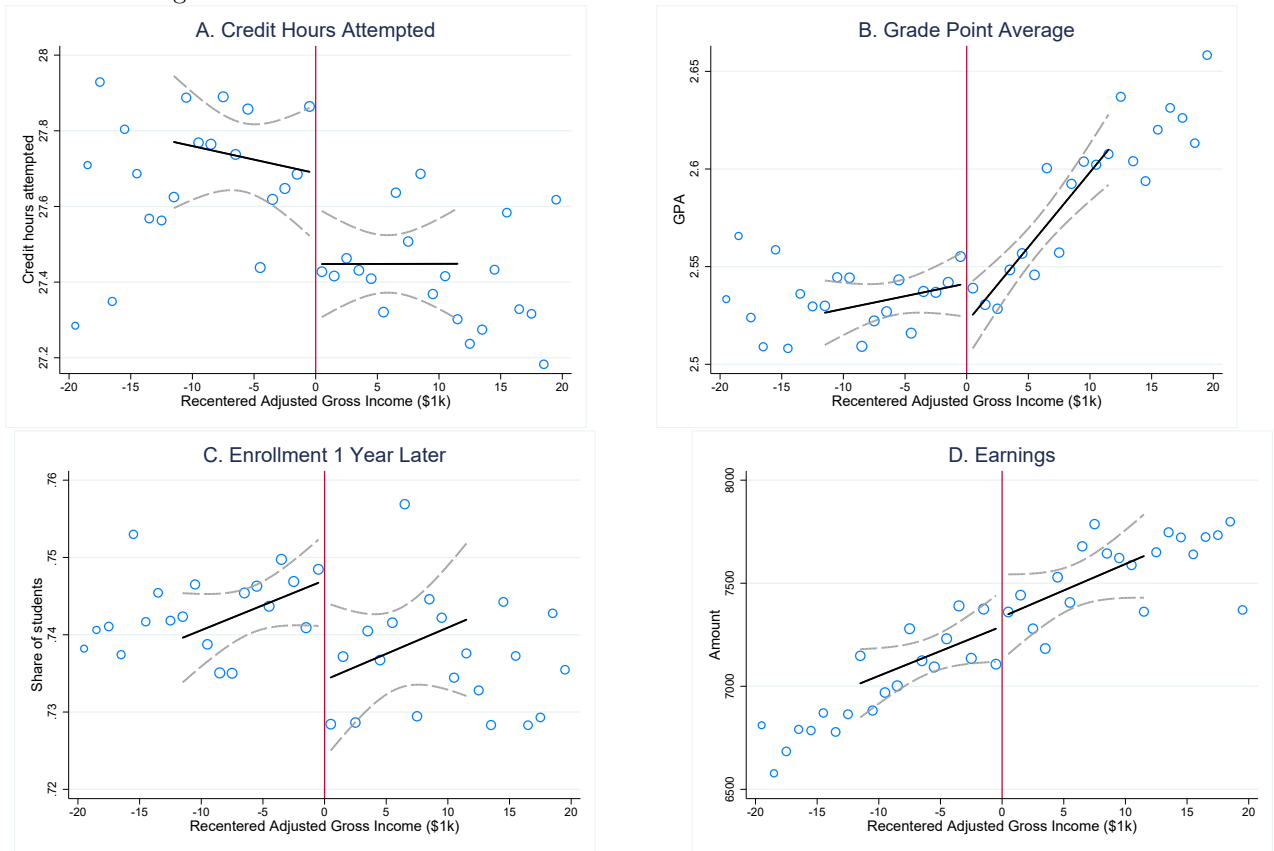

*Note*s: Returning dependent undergraduate students who enrolled in a four-year Texas public institution in 2008 through 2011 and whose family AGI fell within $20,000 of the income eligibility threshold for an automatic zero EFC. Students with AGIs at multiples of $1000 are excluded. Each marker represents the average number of credit hours attempted (Panel A), average GPA (Panel B), share of students who reenrolled the next year(Panel C), or average earnings (Panel D) in the year of college entry within a $1000 AGI bin. Larger circles represent a larger underlying sample size. Solid dark lines represent estimates from a local linear regression of outcome on $\widetilde{AGI}$, estimated separately by eligibility, and weighted by the number of students in the bin. Dashed light lines represent corresponding 95 percent confidence interval. Earnings limited to students in UI-covered jobs in Texas. All dollar amounts adjusted to represent constant 2013$.

Figure B.4: Graduation Rates by Distance to the Automatic Zero EFC Threshold: Returning Students
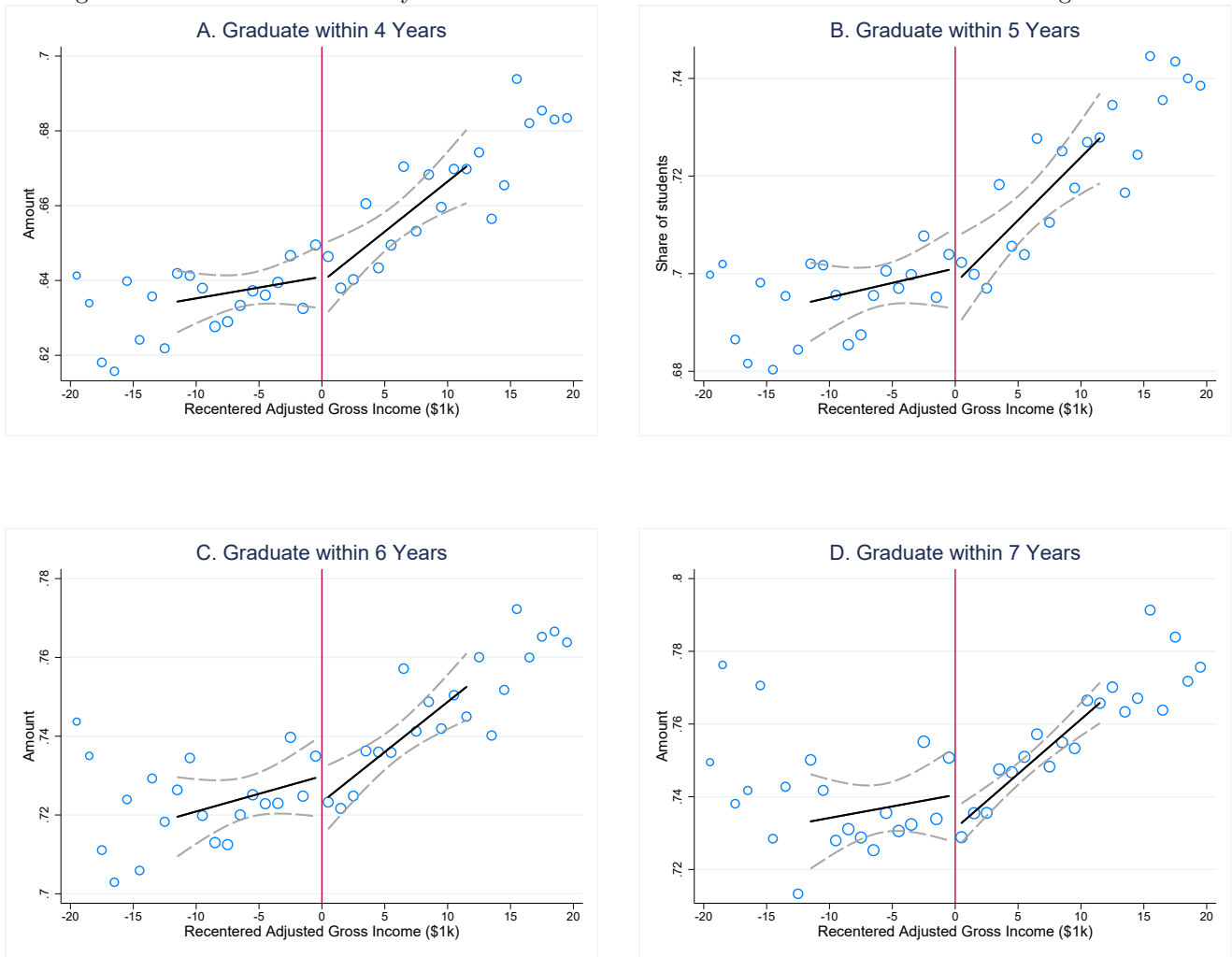
Notes: See Figure B.3 notes for sample description. Each marker represents the share of students receiving a bachelor's degree within the specified number of years since qualifying for an automatic zero EFC within a given $1000 AGI bin. Larger circles represent a larger underlying sample size. Solid dark lines represent estimates from a local linear regression of outcome on $\widetilde{AGI}$, estimated separately by eligibility, and weighted by the number of students in the bin. Dashed light lines represent corresponding 95 percent confidence interval.

Figure B.5: Annual Earnings by Distance to the Automatic Zero EFC Threshold: Returning Students
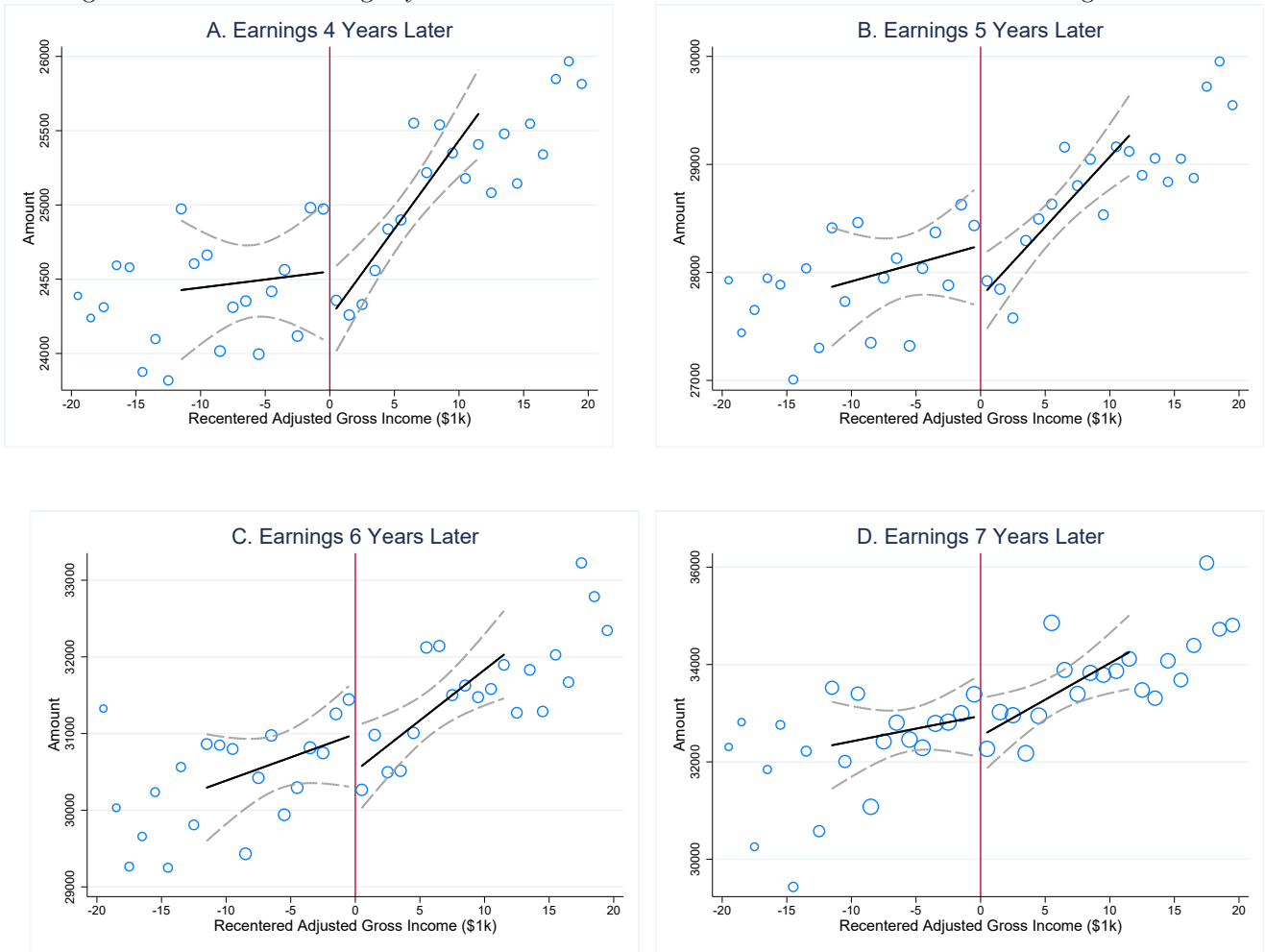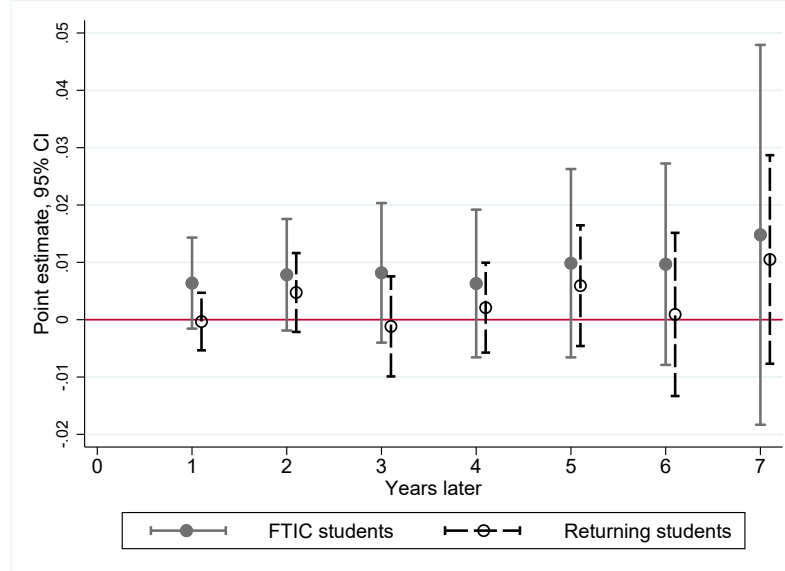

*Note*s: See Figure B.3 notes for sample description. Each marker represents average earnings received by students in the specified number of years since qualifying for an automatic zero EFC within a given $1000 AGI bin. Larger circles represent a larger underlying sample size. Solid dark lines represent estimates from a local linear regression of outcome on $\widetilde{AGI}$, estimated separately by eligibility, and weighted by the number of students in the bin. Dashed light lines represent corresponding 95 percent confidence interval. Earnings limited to students in UI-covered jobs in Texas. All dollar amounts adjusted to represent constant 2013$.

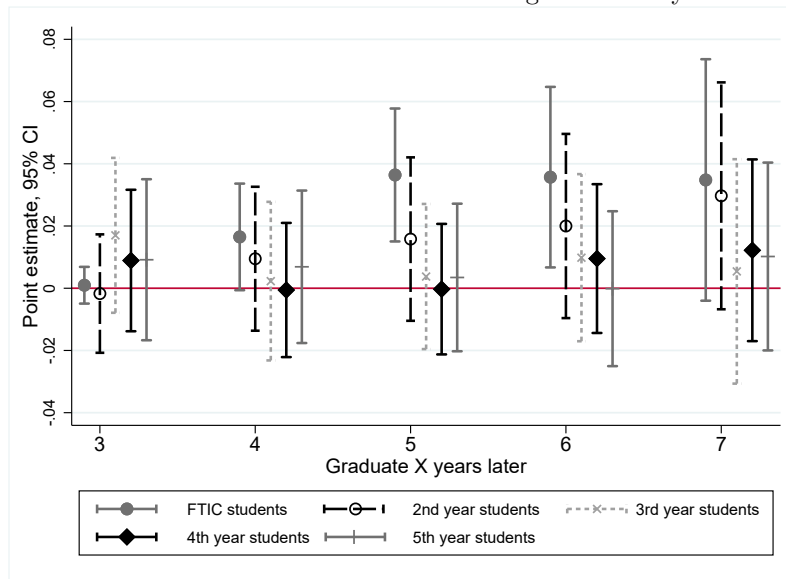Figure B.6: No Effect on Reverse Transfers to Community Colleges
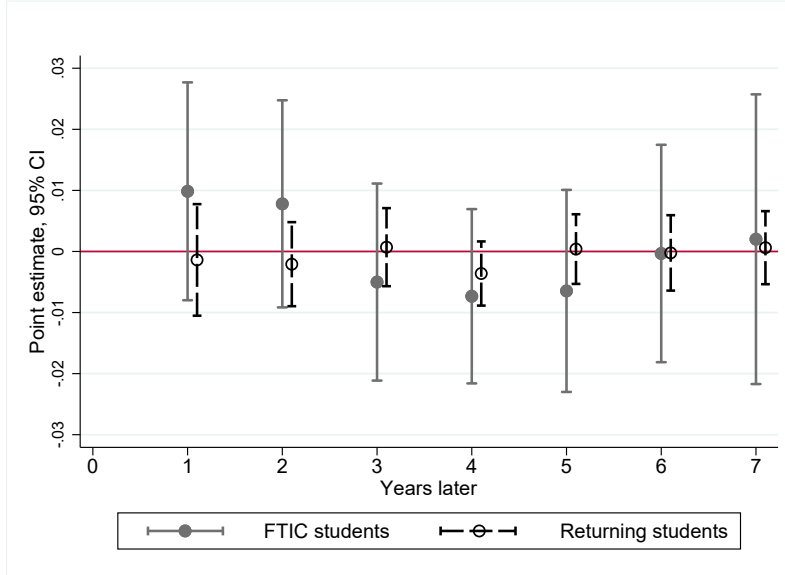
*Note*s: First-time-in-college and returning dependent undergraduate students who enrolled in a four-year Texas public institution in 2008 through 2011 and whose family adjusted gross income fell within $12,000 of the income eligibility threshold for an automatic zero EFC. Students with AGIs at $1000 intervals are excluded. Point estimates and 95% CI from regressions of the probability of enrollment in a Texas community college on income-eligibility for the automatic zero EFC, a linear term in distance from the threshold (allowed to vary on either side), and indicators for parent education, race, gender, age, Texas residency, and cohort. Confidence intervals constructed from robust standard errors clustered at the institution by cohort level.

Figure B.7: No Effect on the Share of Four-Year Students Remaining In-State


*Note*s: See Figure B.6 notes for sample description. Dependent variable is the probability of being "in-state", defined as having earnings in a UI covered sector in Texas and/or any enrollment in a Texas public higher education institution (community college or four-year) in a given academic year. Point estimates and 95% CI from regressions of the dependent variable on income-eligibility for the automatic zero EFC, a linear term in distance from the threshold (allowed to vary on either side), and indicators for parent education, race, gender, age, Texas residency, and cohort. Confidence intervals constructed from robust standard errors clustered at the institution by cohort level.

Figure B.8: Effects on Graduation Rates for FTIC and Returning Students by Level and Years Since Entry

*Note*s: Sample includes first-time-in-college and 2nd through 4th year dependent undergraduate students who enrolled in a four-year Texas public institution in 2008 through 2011, whose family AGI fell within $12,000 of the income eligibility threshold for an automatic zero EFC, and who did not have an AGI at a $1000 interval. Point estimates and 95% confidence intervals from OLS regressions of the probability of graduating within the specified number of years on eligibility for the automatic zero EFC and a linear term in distance from the threshold (allowed to vary on either side). Confidence intervals constructed from robust standard errors clustered at the institution by cohort level. Results for fifth and sixth year students are not shown due to small sample size.

Figure B.9: Effects on Earnings for FTIC and Returning Students by Level and Years Since Entry
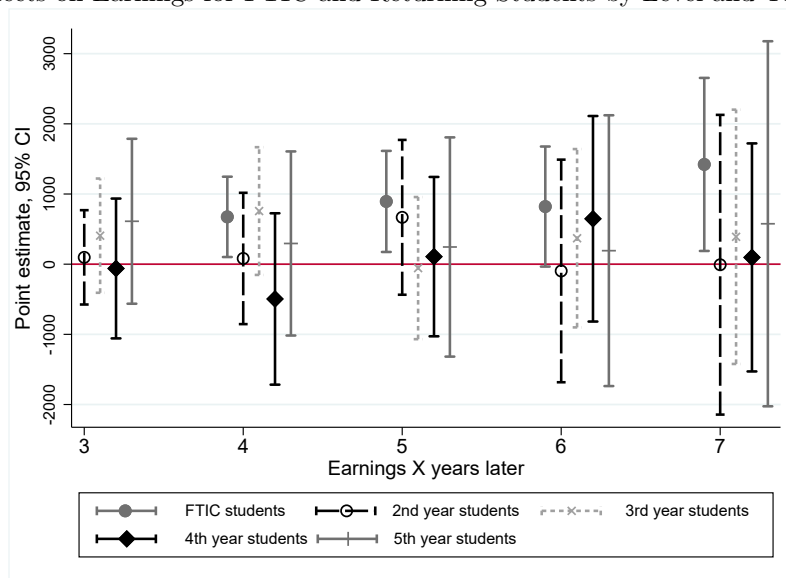
*Note*s: Sample includes first-time-in-college and 2nd through 4th year dependent undergraduate students who enrolled in a four-year Texas public institution in 2008 through 2011, whose family AGI fell within $12,000 of the income eligibility threshold for an automatic zero EFC, and who did not have an AGI at a $1000 interval. Point estimates and 95% confidence intervals from OLS regressions of annual earnings after the specified number of years on eligibility for the automatic zero EFC and a linear term in distance from the threshold (allowed to vary on either side). Confidence intervals constructed from robust standard errors clustered at the institution by cohort level. Results for fifth and sixth year students are not shown due to small sample size.

Figure B.10: Effects of Automatic Zero EFC Eligibility on Grant Aid and TEXAS Grant Receipt
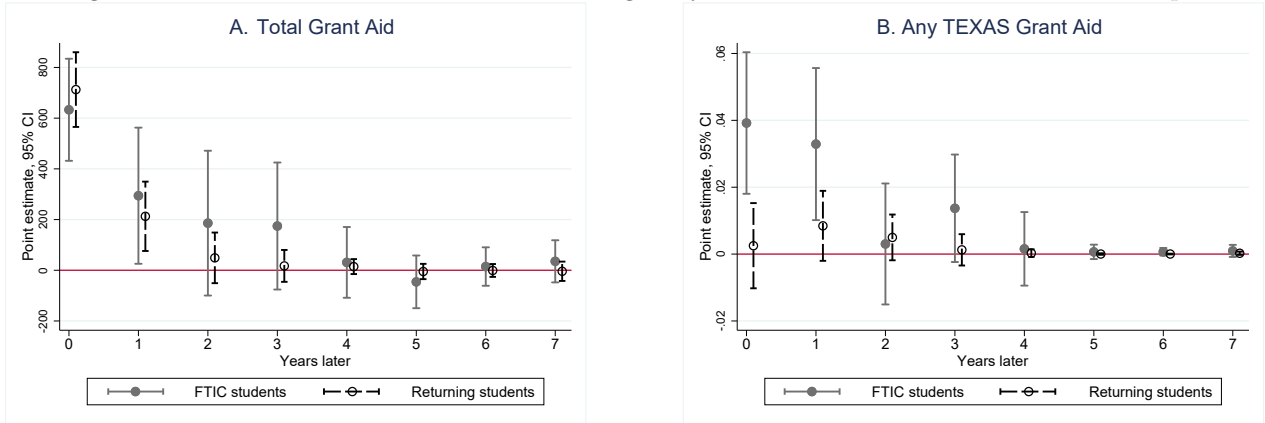
*Note*s: See Figure B.6 notes for sample. Point estimates and 95% CI from regressions the outcome on income-eligibility for the automatic zero EFC, a linear term in distance from the threshold (allowed to vary on either side), and indicators for parent education, race, gender, age, Texas residency, and cohort. Confidence intervals constructed from robust standard errors clustered at the institution by cohort level. All dollar amounts adjusted to represent constant 2013$.

Figure B.11: Percent Four-Year Students with $0 EFC One Year Later by Distance to the Automatic Zero EFC Threshold at Baseline
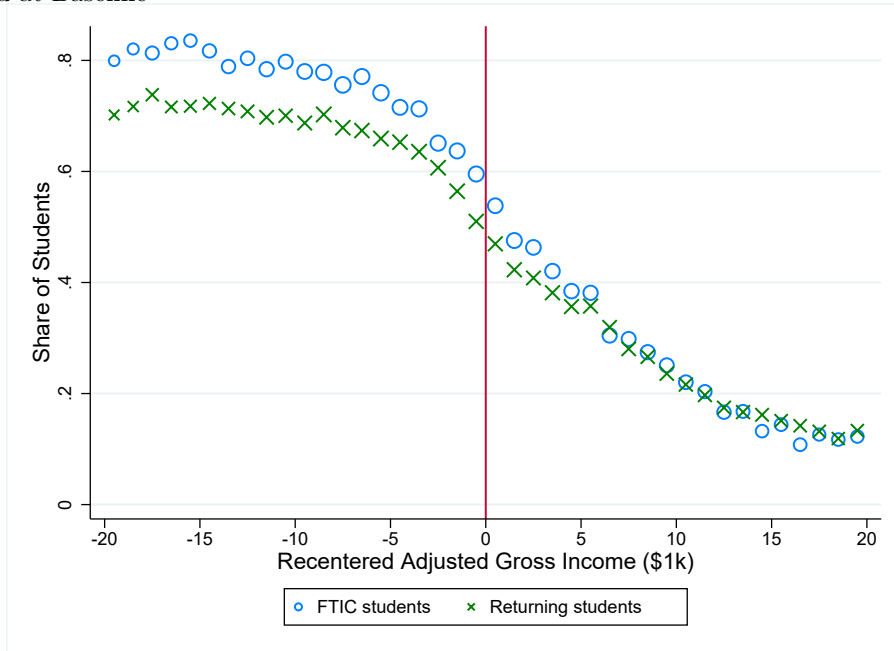
*Note*s: First-time-in-college and returning dependent undergraduate students who enrolled in a four-year Texas public institution in 2008 through 2011 and whose family AGI fell within $20,000 of the income eligibility threshold for an automatic zero EFC. Students with AGIs at multiples of $1000 are excluded. Each marker represents the average percentage of students with a $0 EFC one year later in the $1000 AGI bin. Larger circles represent a larger underlying sample size.

Table B.1: Characteristics of Heapers and Nonheapers: New Students

	(1) Nonheapers	(2) Heapers
Male	0.46	0.46
Age	18.6	18.6
Texas Resident	0.97	0.94
Race		
Asian	0.05	0.11
Black	0.24	0.19
Hispanic	0.22	0.29
White	0.47	0.37
Parental education		
Father: <HS	0.13	0.09
Father: HS degree	0.45	0.44
Father: college degree	0.23	0.32
Mother: <HS	0.12	0.11
Mother: HS degree	0.48	0.46
Mother: college degree	0.29	0.37
Observations	51,777	1,114

*Note*s: First-time-in-college dependent undergraduate students who enrolled in a four-year Texas public institution in 2008 through 2011 and whose family adjusted gross income fell within $18,000 of the income eligibility threshold for an automatic zero EFC (see Figure 1). Heapers are students with AGIs at $1000 intervals, nonheapers are all other students.

Table B.2: Comparison of Analysis Sample with Nationally Representative Sample

	FTIC students		Returning students	
	(1) Analysis sample	(2) 2008 NPSAS	(3) Analysis sample	(4) 2008 NPSAS
A. Student demographics				
Male	0.45	0.43	0.43	0.41
Age	18.6	18.4	20.9	20.7
In-state student	0.97	0.93	0.98	0.96
Race				
Asian	0.05	0.09	0.08	0.12
Black	0.24	0.26	0.20	0.23
Hispanic	0.21	0.23	0.25	0.19
White	0.47	0.40	0.45	0.44
Parental education				
Mother < college degree	0.68	0.64	0.67	0.64
B. Financial aid				
EFC = 0	0.56	0.53	0.46	0.45
Pell Grant aid	$3,877	$3,392	$3,569	$3,068
Total Grants	$9,605	$8,648	$7,600	$7,356
Loans	$2,693	$3,345	$4,038	$4,352
Earnings	$3,803	$2,949	$7,312	$4,967
Work Study	$133	$350	$194	$303

*Note*s: Column 1 (3) sample includes first-time-in-college (returning) dependent undergraduate students who enrolled in a four-year Texas public institution in 2008 through 2011 and whose family AGI fell within $12,000 of the income eligibility threshold for an automatic zero EFC and did not have an AGI at a $1000 interval. Column 2 (4) sample includes first-time (returning) dependent undergraduate bachelor's degree seeking students in the 2008 National Postsecondary Student Aid Study (NPSAS) who enrolled in a public institution in 2008, filed a FAFSA, and had a family AGI within $12,000 of the income eligibility threshold. Mother's education level excludes observations with missing mother education. Total loans includes loans from federal, state, and private sources.

Table B.3: Correlations between Automatic Zero EFC Eligibility and Student Enrollment

Bin size	Bandwidth = $3000			Bandwidth = $6000				Bandwidth = $9000				
	(1) $50	(2) $100	(3) $200	(4) $50	(5) $100	(6) $200	(7) $500	(8) $50	(9) $100	(10) $200	(11) $500	(12) $1000
A. FTIC students												
Automatic zero eligible	2	5	9	1	2	3	8	1.0	2	4	8	13
	(4)	(7)	(15)	(3)	(5)	(11)	(28)	(2)	(4)	(9)	(20)	(27)
Mean | ineligible	79	157	315	81	162	323	809	80	161	321	805	1,612
Implied change	2.5%	3.2%	2.9%	1.2%	1.2%	1.0%	1.0%	1.3%	1.2%	1.2%	1.0%	0.8%
B. Returning students												
Automatic zero eligible	-3	-6	-14	8*	16*	30*	82	7*	15*	28*	76	137
	(6)	(11)	(21)	(5)	(8)	(18)	(50)	(4)	(7)	(15)	(48)	(108)
Mean | ineligible	238	477	954	234	468	936	2,336	238	475	951	2,375	4,761
Implied change	-1.3%	-1.3%	-1.5%	3.4%	3.4%	3.3%	0.3%	3.1%	3.1%	3.0%	1.2%	0.6%

*Note*s: Sample includes first-time-in-college and returning dependent undergraduate students who enrolled in a four-year Texas public institution in 2008 through 2011, whose family AGI fell within the specified bandwidth of the income eligibility threshold for an automatic zero EFC, who did not have an AGI at a $1000 interval. Estimates from a regression of the number of enrolled students in the specified bin size within on automatic zero EFC eligibility, and distance from the AGI eligibility threshold (allowed to vary with eligibility) within the specified bandwidth. Robust standard errors in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$. "Mean | ineligible" represents the limit of the expected value of the dependent variable as the AGI threshold is approached from above the threshold.

Table B.4: Correlations between Automatic Zero Eligibility and Predetermined Characteristics: FTIC Students

	(1) Linear prediction	(2) Father college deg.	(3) Mother college deg.	(4) White	(5) Black	(6) Hispanic	(7) Asian	(8) Age	(9) Texas resident	(10) Male
Automatic zero eligible	0.001	-0.0002	0.001	0.004	-0.013	0.008	-0.0003	-0.005	0.008	0.0005
	(0.002)	(0.009)	(0.010)	(0.014)	(0.017)	(0.011)	(0.006)	(0.015)	(0.005)	(0.010)
Mean | ineligible	0.14	0.22	0.28	0.47	0.26	0.20	0.06	18.6	0.96	0.45

	(11) Father < HS deg	(12) Father HS degree	(13) Father missing ed	(14) Mother < HS deg	(15) Mother HS degree	(16) Mother missing ed	(17) 2008 cohort	(18) 2009 cohort	(19) 2010 cohort	(20) 2011 cohort
Automatic zero eligible	0.012*	-0.020*	0.004	0.011	-0.002	-0.011	-0.0004	0.010	-0.005	-0.004
	(0.007)	(0.011)	(0.009)	(0.008)	(0.011)	(0.008)	(0.011)	(0.016)	(0.013)	(0.013)
Mean | ineligible	0.13	0.47	0.18	0.11	0.50	0.11	0.22	0.24	0.26	28

*Note*s: Sample includes first-time-in-college dependent undergraduate students who enrolled in a four-year Texas public institution in 2008 through 2011, whose family AGI fell within $9,000 of the income eligibility threshold for an automatic zero EFC, and who did not have an AGI at a $1000 interval. See Table 2 notes for and specification. Robust standard errors, clustered by initial institution by entry cohort, in parentheses; *** p<0.01, ** p<0.05, * p<0.1. "Mean | ineligible" represents the limit of the expected value of the dependent variable as the AGI threshold is approached from above the threshold.

Table B.5: Correlations between Automatic Zero Eligibility and Predetermined Characteristics: Returning Students

	(1) Linear prediction	(2) Father college deg.	(3) Mother college deg.	(4) White	(5) Black	(6) Hispanic	(7) Asian	(8) Age	(9) Texas resident	(10) Male
Automatic zero eligible	0.001	-0.002	-0.0004	0.014	-0.020*	0.010	-0.003	-0.009	0.006**	0.001
	(0.001)	(0.005)	(0.006)	(0.009)	(0.011)	(0.006)	(0.003)	(0.009)	(0.002)	(0.007)
Mean | ineligible	0.07	0.25	0.27	0.47	0.21	0.23	0.09	22.3	0.98	0.42

	(11) Father < HS deg	(12) Father HS degree	(13) Father missing ed	(14) Mother < HS deg	(15) Mother HS degree	(16) Mother missing ed	(17) 2008 cohort	(18) 2009 cohort	(19) 2010 cohort	(20) 2011 cohort
Automatic zero eligible	0.009**	-0.009	-0.003	0.014***	-0.020**	0.007*	0.004	0.001	0.005	-0.010
	(0.004)	(0.006)	(0.005)	(0.005)	(0.008)	(0.004)	(0.009)	(0.008)	(0.008)	(0.008)
Mean | ineligible	0.14	0.45	0.16	0.13	0.50	0.09	0.23	0.27	0.23	0.27

*Note*s: Sample includes returning dependent undergraduate students who enrolled in a four-year Texas public institution in 2008 through 2011, whose family AGI fell within $9,000 of the income eligibility threshold for an automatic zero EFC, and who did not have an AGI at a $1000 interval. See Table B.5 notes for and specification. Robust standard errors, clustered by initial institution by entry cohort, in parentheses; *** p<0.01, ** p<0.05, * p<0.1. "Mean | ineligible" represents the limit of the expected value of the dependent variable as the AGI threshold is approached from above the threshold.

Table B.6: The Effect of Automatic Zero Eligibility on Institutional Quality: FTIC Students

A. Summary and inputs

	(1) First principal component	(2) Verbal, 25th percentile	(3) Verbal 75th, percentile	(4) Math, 25th percentile	(5) Math, 75th percentile	(6) Receiving Pell	(7) Borrowing	(8) Applicants admitted	(9) Yield
		SAT scores				**Share of students:**		**Admissions**	
Automatic zero eligible	0.134	5	6	5	6	-1.129	-0.979	0.824	0.873*
	(0.137)	(4)	(5)	(4)	(5)	(0.911)	(0.853)	(0.717)	(0.496)
Mean | ineligible	0.990	443	548	466	567	45.5	50.7	67.5	40.2
Observations	35,419	31,795	31,795	32,119	32,119	35,419	35,419	34,730	34,730

B. Resources and outputs

	(1) Tuition and Fees	(2) Student-faculty ratio	(3) Full-time students	(4) Part-time students	(5) Within 4 years	(6) Within 6 years	(7) Instruction	(8) Academic support svc.	(9) Student services
			Retention rate		**Graduation rate**		**Expenditures per FTE:**		
Automatic zero eligible	-35	0.150	0.842	1.714	0.705	1.122	-78	-21	-6
	(41)	(0.127)	(0.805)	(1.634)	(0.693)	(1.176)	(94)	(46)	(17)
Mean | ineligible	6927	20.9	71.8	52.0	21.5	43.4	7619	2539	1440
Observations	35,418	35,419	35,418	35,418	35,351	35,351	35,419	35,419	35,419

*Note*s: Sample includes first-time-in-college dependent undergraduate students who enrolled in a four-year Texas public institution in 2008 through 2011, whose family AGI fell within $9,000 of the income eligibility threshold for an automatic zero EFC, and who did not have an AGI at a $1000 interval. Students who initially enrolled in schools missing a given measure of institutional quality are also omitted. Point estimates from OLS regressions of the dependent variable specified in each column on income-eligibility for the automatic zero EFC. All models also include controls for a linear term in distance from the AGI threshold (allowed to vary on either side of the threshold), parent education, race, gender, age, Texas residency, and entry cohort. Robust standard errors, clustered by initial institution by entry cohort, in parentheses; *** p<0.01, ** p<0.05, * p<0.1. "Mean | ineligible" represents the limit of the expected value of the dependent variable as the AGI threshold is approached from above. Panel A, column 1 dependent variable is the first principal component of the set of displayed measures of institutional quality. Institutional quality measures come from the IPEDS.

Table B.7: The Effect of Automatic Zero Eligibility on Institutional Quality: Returning Students

A. Summary and inputs

	(1) First principal component	(2) Verbal, 25th percentile	(3) Verbal 75th, percentile	(4) Math, 25th percentile	(5) Math, 75th percentile	(6) Receiving Pell	(7) Borrowing	(8) Applicants admitted	(9) Yield
		SAT scores				Share of students:		Admissions	
Automatic zero eligible	0.055	2	3	3	3	-0.426	-0.698	0.573	0.354
	(0.107)	(3)	(4)	(3)	(4)	(0.694)	(0.649)	(0.456)	(0.343)
Mean | ineligible	1.605	456	563	480	582	43	49.2	66.3	40.8
Observations	105,485	96,757	96,757	97,258	97,258	105,485	105,485	103,842	103,842

B. Resources and outputs

	(1) Tuition and Fees	(2) Student-faculty ratio	(3) Full-time students	(4) Part-time students	(5) Within 4 years	(6) Within 6 years	(7) Instruction	(8) Academic support svc.	(9) Student services
			Retention rate		Graduation rate		Expenditures per FTE:		
Automatic zero eligible	-36*	0.124	0.543	1.137	0.386	0.737	-93*	21	-3
	(21)	(0.088)	(0.604)	(1.211)	(0.524)	(0.886)	(56)	(32)	(11)
Mean | ineligible	7130	20.9	74.3	55.8	23.9	47.0	8139	2732	1459
Observations	105,118	105,485	105,118	105,118	104,878	104,878	105,485	105,485	105,485

*Note*s: Sample includes returning dependent undergraduate students who enrolled in a four-year Texas public institution in 2008 through 2011, whose family AGI fell within $9,000 of the income eligibility threshold for an automatic zero EFC, and who did not have an AGI at a $1000 interval. Students who initially enrolled in schools missing a given measure of institutional quality are also omitted. Point estimates from OLS regressions of the dependent variable specified in each column on income-eligibility for the automatic zero EFC. All models also include controls for a linear term in distance from the AGI threshold (allowed to vary on either side of the threshold), parent education, race, gender, age, Texas residency, and entry cohort. Robust standard errors, clustered by initial institution by entry cohort, in parentheses; *** p<0.01, ** p<0.05, * p<0.1. "Mean | ineligible" represents the limit of the expected value of the dependent variable as the AGI threshold is approached from above. Panel A, column 1 dependent variable is the first principal component of the set of displayed measures of institutional quality. Institutional quality measures come from the IPEDS.

Table B.8: Estimated Effects of Automatic Zero Eligibility on the Probability of Earning > $0

	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)
A. FTIC students								
Automatic zero eligible	-0.015	-0.006	-0.010	-0.002	0.011	0.012	0.004	0.016
	(0.009)	(0.008)	(0.009)	(0.008)	(0.007)	(0.007)	(0.008)	(0.012)
Mean | ineligible	0.68	0.73	0.76	0.78	0.78	0.78	0.79	0.77
Observations	37,227	37,227	37,227	37,227	37,227	37,227	26,707	17,308
B. Returning students								
Automatic zero eligible	-0.007	-0.003	0.000	-0.001	0.003	0.004	0.003	0.005
	(0.005)	(0.005)	(0.005)	(0.005)	(0.004)	(0.004)	(0.005)	(0.008)
Mean | ineligible	0.81	0.83	0.83	0.83	0.83	0.82	0.81	0.79
Observations	110,603	110,603	110,603	110,603	110,603	110,603	79,215	51,939

Notes: Sample includes first-time-in-college and returning dependent undergraduate students who enrolled in a four-year Texas public institution in 2008 through 2011, whose family AGI fell within $9,000 of the income eligibility threshold for an automatic zero EFC, and who did not have an AGI at a $1000 interval. Column heading indicates number of years following entry. Each cell denotes an estimate from a separate regression. Point estimates from OLS regressions of the probability of nonzero earnings on income-eligibility for the automatic zero EFC. All models also include controls for a linear term in distance from the AGI threshold (allowed to vary on either side of the threshold), parent education, race, gender, age, Texas residency, and entry cohort. Robust standard errors, clustered by initial institution by entry cohort, in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$. "Mean \| ineligible" represents the limit of the expected value of the dependent variable as the AGI threshold is approached from above.

Table B.9: Estimated Effects of Automatic Zero Eligibility on Non-Winsorized Earnings

	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)
A. FTIC students								
Automatic zero eligible	-134	-143	-3	278	682**	922**	794*	4552
	(112)	(135)	(168)	(220)	(293)	(379)	(475)	(2986)
Mean | ineligible	$3,829	$5,651	$7,483	$9,517	$13,429	$17,963	$21,505	$23,672
Observations	37,227	37,227	37,227	37,227	37,227	37,227	26,707	17,308
B. Returning students								
Automatic zero eligible	-144	-4	109	449*	391	422	549	280
	(121)	(146)	(182)	(230)	(276)	(268)	(404)	(590)
Mean | ineligible	$10,204	$15,922	$21,553	$25,551	$29,009	$31,933	$34,317	$36,796
Observations	110,603	110,603	110,603	110,603	110,603	110,603	79,215	51,939

Notes: Sample includes first-time-in-college and returning dependent undergraduate students who enrolled in a four-year Texas public institution in 2008 through 2011, whose family AGI fell within $9,000 of the income eligibility threshold for an automatic zero EFC, and who did not have an AGI at a $1000 interval. Column heading indicates number of years following entry. Each cell denotes an estimate from a separate regression. Point estimates from OLS regressions of non-winsorized earnings on income-eligibility for the automatic zero EFC. All models also include controls for a linear term in distance from the AGI threshold (allowed to vary on either side of the threshold), parent education, race, gender, age, Texas residency, and entry cohort. Robust standard errors, clustered by initial institution by entry cohort, in parentheses; *** p<0.01, ** p<0.05, * p<0.1. "Mean | ineligible" represents the limit of the expected value of the dependent variable as the AGI threshold is approached from above. All dollar amounts adjusted to represent constant 2013$.

Table B.10: Robustness of Estimated Effects of Automatic Zero Eligibility on FTIC Students' Graduation and Earnings

| | Contemporaneous outcomes: | | | | Graduate within: | | | | Earnings after | | | |
	(1) EFC = 0	(2) Total Grants	(3) Credits attempted	(4) GPA	(5) 4 years	(6) 5 years	(7) 6 years	(8) 7 years	(9) 4 years	(10) 5 years	(11) 6 years	(12) 7 years
A. No covariates												
Automatic zero eligible	0.521***	633***	0.282*	0.037	0.017*	0.036***	0.036**	0.035*	739**	986**	922**	1516**
	(0.013)	(0.103)	(0.145)	(0.029)	(0.009)	(0.011)	(0.015)	(0.020)	(305)	(384)	(452)	(635)
Observations	37,227	37,227	37,227	37,227	37,227	37,227	26,707	17,308	37,227	37,227	26,707	17,308
B. Including bunchers												
Automatic zero eligible	0.518***	640***	0.226*	0.030	0.015*	0.033***	0.031**	0.028	641**	934**	865**	1338**
	(0.014)	(94)	(0.134)	(0.025)	(0.008)	(0.010)	(0.014)	(0.018)	(291)	(368)	(439)	(635)
Observations	38,022	38,022	38,022	38,022	38,022	38,022	27,271	17,643	38,022	38,022	27,271	17,643
C. $6K bandwidth												
Automatic zero eligible	0.488***	660***	0.256	0.052	0.026**	0.040***	0.054***	0.052**	781*	1337***	1363**	2396**
	(0.018)	(131)	(0.197)	(0.034)	(0.011)	(0.013)	(0.017)	(0.021)	(437)	(483)	(645)	(973)
Observations	19,223	19,223	19,223	19,223	19,223	19,223	13,916	9,137	19,223	19,223	13,916	9,137
D. $18K bandwidth												
Automatic zero eligible	0.554***	566***	0.165	0.026	0.015**	0.020**	0.022*	0.011	505**	613**	581*	825
	(0.013)	(83)	(0.111)	(0.022)	(0.007)	(0.008)	(0.011)	(0.015)	(220)	(286)	(327)	(545)
Observations	51,777	51,777	51,777	51,777	51,777	51,777	36,254	22,388	51,777	51,777	36,254	22,388
E. $18K bandwidth, quadratic in AGI												
Automatic zero eligible	0.489***	712***	0.285	0.039	0.018*	0.044***	0.046***	0.051**	816**	1233***	919	1839**
	(0.015)	(0.111)	(0.178)	(0.032)	(0.009)	(0.012)	(0.016)	(0.012)	(374)	(470)	(615)	(860)
Observations	51,777	51,777	51,777	51,777	51,777	51,777	36,254	22,388	51,777	51,777	36,254	22,388

*Note*s: First-time-in-college dependent undergraduate students who enrolled in a four-year Texas public institution in 2008 through 2011 and whose family adjusted gross income fell within $12,000 (Panels A and B), $6000 (Panel C), or $18,000 (Panels D and E) of the income eligibility threshold for an automatic zero EFC. Students with AGIs at $1000 intervals are excluded from sample in Panels A, C, D, and E. Point estimates from OLS regressions of the dependent variable specified in each column on income-eligibility for the automatic zero EFC. All models include a linear term in the distance from the AGI threshold (allowed to vary on either side of the threshold). Panels B through E models also include controls for parent education, race, gender, age, Texas residency, and entry cohort. Panel E models also include controls for a quadratic in the distance from the AGI threshold (allowed to vary on either side of the threshold). Robust standard errors, clustered by initial institution by entry cohort, in parentheses; *** p<0.01, ** p<0.05, * p<0.1. "Mean | ineligible" represents the limit of the expected value of the dependent variable as the AGI threshold is approached from above. All dollar amounts adjusted for inflation (2013$).

Table B.11: Robustness of Estimated Effects of Automatic Zero Eligibility on Returning Students' Graduation and Earnings

	Contemporaneous outcomes:				Graduate within the next:				Earnings after			
	(1) EFC = 0	(2) Total Grants	(3) Credits attempted	(4) GPA	(5) 3 years	(6) 4 years	(7) 5 years	(8) 6 years	(9) 4 years	(10) 5 years	(11) 6 years	(12) 7 years
A. No covariates												
Automatic zero eligible	0.488***	713***	0.199*	0.020	0.006	0.002	0.003	0.008	339	513*	542	388
	(0.011)	(75)	(0.110)	(0.016)	(0.007)	(0.007)	(0.008)	(0.009)	(275)	(268)	(390)	(474)
Observations	110,607	110,607	110,607	110,607	110,607	110,607	110,607	79,219	110,607	110,607	79,219	51,943
B. Including bunchers												
Automatic zero eligible	0.487***	725***	0.192*	0.013	0.005	0.001	0.001	0.005	274	400	378	66
	(0.011)	(76)	(0.108)	(0.013)	(0.006)	(0.007)	(0.007)	(0.008)	(266)	(248)	(363)	(432)
Observations	112,923	112,923	112,923	112,923	112,923	112,923	112,923	80,841	112,923	112,923	80,841	53,013
C. $6K bandwidth												
Automatic zero eligible	0.456***	792***	0.248	0.015	0.011	0.004	0.000	0.013	914**	1154***	1464***	1123**
	(0.013)	(99)	(0.158)	(0.018)	(0.008)	(0.009)	(0.008)	(0.010)	(380)	(372)	(472)	(564)
Observations	57,453	57,453	57,453	57,453	57,453	57,453	57,453	41,596	57,453	57,453	41,596	27,879
D. $18K bandwidth												
Automatic zero eligible	0.514***	742***	0.248***	0.003	0.006	0.002	0.001	0.005	209	309	384	414
	(0.011)	(70)	(0.095)	(0.011)	(0.005)	(0.006)	(0.006)	(0.006)	(206)	(210)	(301)	(381)
Observations	155,056	155,056	155,056	155,056	155,056	155,056	155,056	108,883	155,056	155,056	108,883	68,330
E. $18K bandwidth, quadratic in AGI												
Automatic zero eligible	0.462***	775***	0.242*	0.022	0.008	0.002	0.003	0.010	689**	791**	627	311
	(0.012)	(84)	(0.138)	(0.016)	(0.007)	(0.008)	(0.008)	(0.010)	(341)	(324)	(476)	(601)
Observations	155,056	155,056	155,056	155,056	155,056	155,056	155,056	108,883	155,056	155,056	108,883	68,330

Notes: Returning dependent undergraduate students who enrolled in a four-year Texas public institution in 2008 through 2011 and whose family adjusted gross income fell within $12,000 (Panels A and B), $6000 (Panel C), or $18,000 (Panels D and E) of the income eligibility threshold for an automatic zero EFC. Students with AGIs at $1000 intervals are excluded from sample in Panels A, C, D, and E. Point estimates from OLS regressions of the dependent variable specified in each column on income-eligibility for the automatic zero EFC. All models include a linear term in the distance from the AGI threshold (allowed to vary on either side of the threshold). Panels B through E models also include controls for parent education, race, gender, age, Texas residency, and entry cohort. Panel E models also include controls for a quadratic in the distance from the AGI threshold (allowed to vary on either side of the threshold). Robust standard errors, clustered by initial institution by entry cohort, in parentheses; *** p<0.01, ** p<0.05, * p<0.1. "Mean | ineligible" represents the limit of the expected value of the dependent variable as the AGI threshold is approached from above. All dollar amounts adjusted for inflation (2013$).

Table B.12: Long-run Attainment and Earnings Outcomes for Restricted Sample: FTIC Students

	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)
A. Enrollment by years since entry								
Automatic zero eligible	--	0.020	0.004	0.026	-0.011	-0.014	-0.017	0.011
	--	(0.018)	(0.020)	(0.020)	(0.018)	(0.017)	(0.013)	(0.019)
Mean | ineligible	--	0.72	0.58	0.5	0.38	0.20	0.10	0.07
Observations	--	10,990	10,990	10,990	10,990	7,330	4,339	1,955
B. Credits attempted								
Automatic zero eligible	0.518**	0.895**	0.494	0.694	-0.356	-0.397	0.197	0.111
	(0.243)	(0.441)	(0.540)	(0.573)	(0.471)	(0.476)	(0.438)	(0.499)
Mean | ineligible	27.3	21.8	18.8	15.9	10.5	5.8	3.0	2.0
Observations	10,990	10,990	10,990	10,990	10,990	7,330	4,339	1955
C. Graduation with X years								
Automatic zero eligible	--	--	0.003	0.007	0.033**	0.036*	0.046*	0.049
	--	--	(0.002)	(0.005)	(0.014)	(0.020)	(0.024)	(0.036)
Mean | ineligible	--	--	<0.01	0.01	0.12	0.28	0.36	0.39
Observations	--	--	10,990	10,990	10,990	10,990	7,330	4,339
D. Earnings by years since entry								
Automatic zero eligible	-372**	-228	213	389	1166**	1538**	1815**	2791**
	(160)	(216)	(293)	(415)	(530)	(636)	(850)	(1324)
Mean | ineligible	$3,573	$5,586	$7,328	$9,525	$13,078	$17,249	$20,415	$23,125
Observations	10,990	10,990	10,990	10,990	10,990	10,990	7,330	4,339

Notes: First-time-in-college dependent undergraduate students who enrolled in a four-year Texas public institution in 2008 through 2011 and whose family AGI fell within $12,000 of the income eligibility threshold for an automatic zero EFC. Students with AGIs at multiples of $1000 are excluded. Students with unmet need less than $13,500 are also excluded, which eliminates students whose eligibility for federal loans could be mechanically affected by the increase in TEXAS Grant aid that arises from gaining eligibility for an automatic zero EFC. Column heading indicates number of years following entry. Each cell denotes an estimate from a separate regression. Point estimates from OLS regressions of the dependent variable specified in each column on income-eligibility for the automatic zero EFC. All models include a linear term in the distance from the AGI threshold (allowed to vary on either side of the threshold) and controls for parent education, race, gender, age, Texas residency, and entry cohort. Robust standard errors, clustered by initial institution by entry cohort, in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$. "Mean \| ineligible" represents the limit of the expected value of the dependent variable as the AGI threshold is approached from above the threshold.

Table B.13: The Effect of Automatic Zero Eligibility on Returning Students' Contemporaneous Financial Outcomes by Years Since Entry

	(1) EFC = 0	(2) Total grant aid	(3) Pell Grant aid	(4) TEXAS Grant aid	(5) Other grant aid	(6) Work-study	(7) Earnings	(8) Loans
A. Second year students								
Automatic zero eligible	0.476***	500***	515***	-40	48	19	-83	-69
	(0.015)	(136)	(48)	(85)	(80)	(17)	(157)	(94)
Mean | ineligible	0.291	$8,915	$4,032	$2,847	$2,456	$199	$5,152	$3,145
Observations	28,603	28,603	28,603	28,603	28,603	28,603	28,603	28,603
B. Third year students								
Automatic zero eligible	0.483***	663***	585***	39	83	13	-23	-329***
	(0.014)	(141)	(54)	(65)	(98)	(18)	(185)	(93)
Mean | ineligible	0.244	$8,092	$3,941	$1,714	$2,731	$206	$6,193	$4,094
Observations	28,603	28,603	28,603	28,603	28,603	28,603	28,603	28,603
D. Fourth year students								
Automatic zero eligible	0.492***	838***	752***	48	108	-7	89	-581***
	(0.014)	(125)	(64)	(59)	(84)	(20)	(232)	(104)
Mean | ineligible	0.208	$7,388	$3,590	$1,454	$2,502	$222	$7,688	$4,606
Observations	26,653	26,653	26,653	26,653	26,653	26,653	26,653	26,653
E. Fifth year students								
Automatic zero eligible	0.498***	947***	899***	17	108	33*	43	-319***
	(0.016)	(116)	(71)	(60)	(84)	(19)	(260)	(116)
Mean | ineligible	0.181	$5,494	$2,957	$983	$2,502	$141	$10,086	$4,602
Observations	19,395	19,395	19,395	19,395	19,395	19,395	19,395	19,395

*Note*s: Point estimates from OLS regressions of the dependent variable specified in each column on eligibility for the automatic zero EFC. All models also include controls for a linear term in distance from the AGI threshold (allowed to vary on either side of the threshold), parent education, race, gender, age, Texas residency, and entry cohort. Robust standard errors, clustered by initial institution by entry cohort, in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$. "Mean | ineligible" represents the limit of the expected value of the dependent variable as the AGI threshold is approached from above. All dollar amounts adjusted for inflation (2013$).

Appendix C: Additional Results for Community College Sample

Figure C.1: Number of Students Attending Community Colleges by Distance to the Automatic Zero EFC Threshold

First-time-in-college students

Returning students
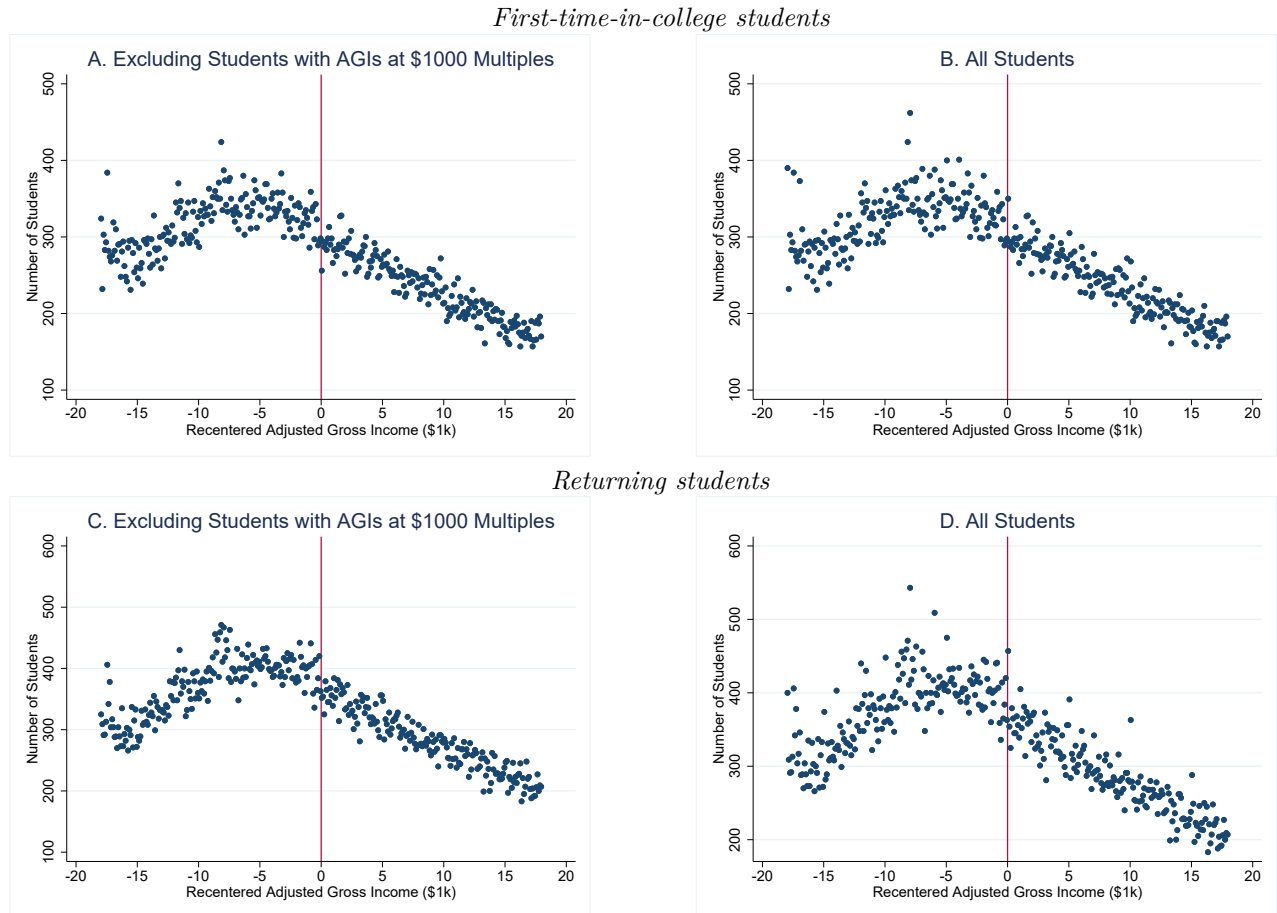
*Note*s: Sample in Panels A and B (C and D) include first-time-in-college (returning) dependent college students who enrolled in a Texas community college institution in 2008 through 2011 and whose family AGI fell within $18,000 of the eligibility threshold for an automatic zero EFC. Students with AGIs at $1000 intervals are excluded in Panels A and C. Each marker represents the number of students within a given $100 bin.

Figure C.2: Correlations between Automatic Zero EFC Eligibility and Community College Students' Academic and Labor Market Outcomes
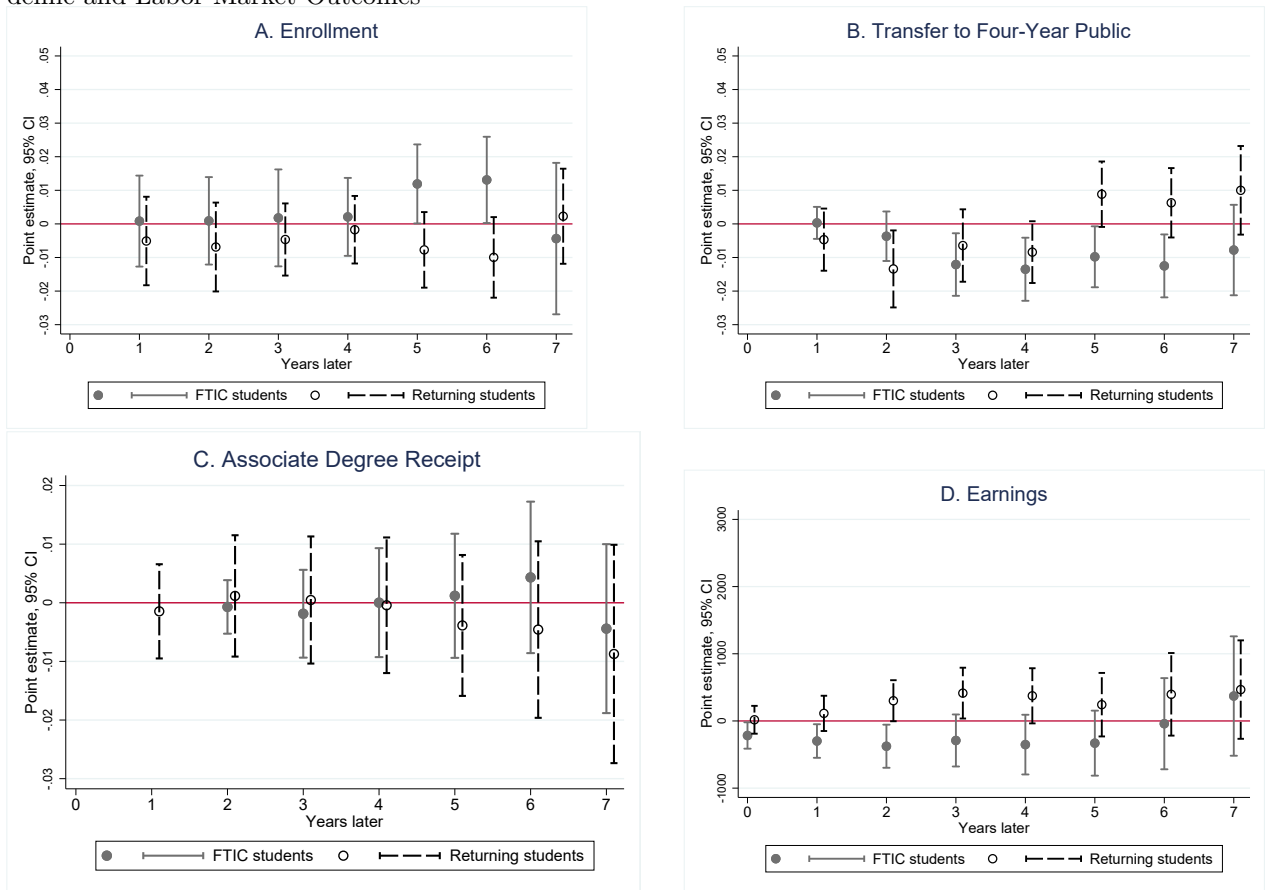
*Note*s: First-time-in-college and returning dependent undergraduate students who enrolled in a Texas community college in 2008 through 2011 and whose family AGI fell within $12,000 of the eligibility threshold for an automatic zero EFC. Students with AGIs at $1000 intervals are excluded. Point estimates and 95% CI from regressions of the probability of reenrollment (Panel A), enrollment in a four-year public institution (Panel B), probability of associate degree receipt (Panel C), or annual earnings (Panel D) on eligibility for the automatic zero EFC, a linear term in distance from the threshold (allowed to vary on either side), and indicators for parent education, race, gender, age, Texas residency, and cohort. Confidence intervals constructed using robust standard errors clustered at initial institution by entry cohort level. Earnings limited to students in UI-covered jobs in Texas. Federal income and payroll taxes imputed using NBER TAXSIM (see Section 5.2 and Online Appendix D). All dollar amounts adjusted to represent constant 2013$.

Table C.1: Community College Sample Demographics and Contemporaneous Finances

	FTIC students			Returning students		
	(1) Full sample	(2) AZ eligible	(3) AZ ineligible	(4) Full sample	(5) AZ eligible	(6) AZ ineligible
A. Student demographics						
Male	0.48	0.48	0.48	0.44	0.44	0.44
Age	18.9	18.9	18.9	20.5	20.5	20.4
Texas Resident	0.97	0.97	0.97	0.99	0.99	0.99
Race						
Asian	0.02	0.02	0.02	0.03	0.03	0.03
Black	0.16	0.17	0.16	0.14	0.13	0.14
Hispanic	0.22	0.20	0.25	0.23	0.21	0.26
White	0.56	0.58	0.54	0.59	0.61	0.56
Parental education						
Father: <HS	0.16	0.17	0.16	0.17	0.18	0.16
Father: HS degree	0.44	0.43	0.45	0.43	0.43	0.45
Father: college degree	0.15	0.14	0.16	0.17	0.16	0.18
Mother: <HS	0.44	0.45	0.44	0.44	0.45	0.44
Mother: HS degree	0.23	0.22	0.25	0.24	0.22	0.26
Mother: college degree	0.00	0.00	0.00	0.00	0.00	0.00
B. Financial aid						
EFC = 0	0.65	0.92	0.30	0.55	0.85	0.25
Pell Grant aid	$3,308	$3,688	$2,809	$3,001	$3,452	$2,418
Texas Grant aid	$451	$453	$449	$246	$248	$243
Total Grants	$4,168	$4,548	$3,667	$3,597	$4,040	$3,024
Loans	$544	$491	$613	$649	$567	$754
Earnings	$6,046	$5,858	$6,294	$8,823	$8,690	$8,995
Work Study	$47	$47	$48	$86	$88	$83
Observations	70,548	40,097	30,451	84,375	47,562	36,813

*Note*s: First-time-in-college and returning dependent undergraduate students who enrolled in a Texas community college in 2008 through 2011 and whose family AGI fell within $12,000 of the eligibility threshold for an automatic zero EFC. Students with AGIs at $1000 intervals are excluded. Race and parent education categories will not sum to 100 percent due to missing values. All dollar amounts adjusted for inflation (2013$).

Table C.2: Correlations between Automatic Zero EFC Eligibility and Student Enrollment: Community College Students

Bin size	Bandwidth = $3000			Bandwidth = $6000				Bandwidth = $9000				
	(1) $50	(2) $100	(3) $200	(4) $50	(5) $100	(6) $200	(7) $500	(8) $50	(9) $100	(10) $200	(11) $500	(12) $1000
A. FTIC students												
Automatic zero eligible	12**	28***	56***	12***	23***	46***	100**	11***	21***	43***	102***	202**
	(5)	(10)	(15)	(3)	(8)	(11)	(35)	(3)	(6)	(10)	(28)	(46)
Mean | ineligible	146	291	582	148	296	591	1477	150	299	599	1488	2,975
Implied change	8.2%	9.6%	9.6%	8.1%	7.8%	7.8%	6.8%	7.3%	7.0%	7.2%	6.9%	6.8%
B. Returning students												
Automatic zero eligible	6	13	24	11**	22**	45***	136***	12***	23***	46***	124***	253***
	(6)	(14)	(24)	(4)	(9)	(17)	(26)	(3)	(7)	(13)	(25)	(63)
Mean | ineligible	187	374	748	184	368	736	1,811	184	368	736	1,822	3,641
Implied change	3.2%	3.5%	3.2%	6.0%	6.0%	6.1%	7.5%	6.5%	6.3%	6.3%	6.8%	6.9%

*Note*s: Sample includes first-time-in-college dependent students who enrolled in a Texas community college institution in 2008 through 2011, whose family AGI fell within the specified bandwidth of the income eligibility threshold for an automatic zero EFC, and who did not have an AGI at a $1000 interval. Estimates from a regression of the number of enrolled students in the specified bin size within on automatic zero EFC eligibility, and distance from the AGI eligibility threshold (allowed to vary with eligibility) within the specified bandwidth. Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1. "Mean | ineligible" represents the limit of the expected value of the dependent variable as the AGI threshold is approached from above the threshold.

Table C.3: Correlations between Automatic Zero Eligibility and Predetermined Characteristics: New Community College Students

	(1) Linear prediction	(2) Father college deg.	(3) Mother college deg.	(4) White	(5) Black	(6) Hispanic	(7) Asian	(8) Age	(9) Texas resident	(10) Male
Automatic zero eligible	0.0001	0.006	0.027***	-0.005	0.003	0.003	-0.0002	-0.021	0.0004	-0.005
	(0.008)	(0.006)	(0.007)	(0.008)	(0.007)	(0.007)	(0.002)	(0.019)	(0.003)	(0.008)
Mean | ineligible	0.13	0.14	0.22	0.57	0.17	0.22	0.02	18.9	0.97	0.48

	(11) Father < HS deg	(12) Father HS degree	(13) Father missing ed	(14) Mother < HS deg	(15) Mother HS degree	(16) Mother missing ed	(17) 2008 cohort	(18) 2009 cohort	(19) 2010 cohort	(20) 2011 cohort
Automatic zero eligible	-0.007	0.018**	-0.016*	-0.009	0.010	-0.028***	0.011	0.008	-0.006	-0.013
	(0.008)	(0.009)	(0.010)	(0.006)	(0.008)	(0.009)	(0.008)	(0.009)	(0.009)	(0.009)
Mean | ineligible	0.17	0.43	0.26	0.15	0.45	0.18	0.22	0.26	0.25	0.27

*Note*s: Sample includes first-time-in-college dependent undergraduate students who enrolled in a Texas community college in 2008 through 2011 and whose family AGI fell within $9,000 of the income eligibility threshold for an automatic zero EFC and did not have an AGI at a $1000 interval. See Table 2 notes for and specification. Robust standard errors, clustered by initial institution by entry cohort, in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$. "Mean | ineligible" represents the limit of the expected value of the dependent variable as the AGI threshold is approached from above the threshold.

Table C.4: Correlations between Automatic Zero Eligibility and Predetermined Characteristics: Returning Community College Students

	(1) Linear prediction	(2) Father college deg.	(3) Mother college deg.	(4) White	(5) Black	(6) Hispanic	(7) Asian	(8) Age	(9) Texas resident	(10) Male
Automatic zero eligible	0.0003	-0.002	0.006	0.010	-0.015***	0.007	-0.001	0.006	-0.001	0.006
	(0.0006)	(0.006)	(0.007)	(0.007)	(0.005)	(0.007)	(0.003)	(0.015)	(0.002)	(0.007)
Mean | ineligible	0.06	0.18	0.25	0.59	0.14	0.24	0.02	22.3	>0.99	0.41

	(11) Father < HS deg	(12) Father HS degree	(13) Father missing ed	(14) Mother < HS deg	(15) Mother HS degree	(16) Mother missing ed	(17) 2008 cohort	(18) 2009 cohort	(19) 2010 cohort	(20) 2011 cohort
Automatic zero eligible	0.007	0.005	-0.010	-0.00002	0.009	-0.015*	-0.005	0.002	-0.0003	0.003
	(0.006)	(0.009)	(0.009)	(0.006)	(0.0105)	(0.008)	(0.007)	(0.007)	(0.007)	(0.008)
Mean | ineligible	0.16	0.43	0.22	0.16	0.45	0.15	0.23	0.27	0.24	0.27

Notes: Sample includes returning dependent undergraduate students who enrolled in a Texas community college in 2008 through 2011 and whose family AGI fell within $9,000 of the income eligibility threshold for an automatic zero EFC and did not have an AGI at a $1000 interval. See Table 2 notes for and specification. Robust standard errors, clustered by initial institution by entry cohort, in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$. "Mean | ineligible" represents the limit of the expected value of the dependent variable as the AGI threshold is approached from above the threshold.

Table C.5: The Effect of Automatic Zero Eligibility on Institutional Quality for New Community College Students

A. Summary and inputs

		Share of students:	
	(1) First principal component	(2) Receiving Pell	(3) Borrowing
Automatic zero eligible	-0.025	0.286	-0.101
	(0.026)	(0.279)	(0.358)
Mean | ineligible	-0.31	40.0	17.6
Observations	70,548	70,548	70,548

B. Resources

	Expenditures per FTE:				
	(1) Instruction	(2) Academic support svc.	(3) Student services	(3) Tuition and Fees	(4) Student-faculty ratio
Automatic zero eligible	-59	-21*	-19*	-12	0.103
	(40)	(11)	(11)	(32)	(0.087)
Mean | ineligible	5,168	1,089	1,171	2,292	20.8
Observations	70,548	70,548	70,548	70,548	70,548

C. Outputs

	Retention rate			
	(3) Full-time students	(4) Part-time students	(5) 200% graduation rate	(6) Transfer rate
Automatic zero eligible	-0.180	-0.244	-0.054	-0.448*
	(0.214)	(0.163)	(0.142)	(0.235)
Mean | ineligible	58.0	43.7	20.1	21.7
Observations	70,548	70,548	70,548	70,548

*Note*s: Sample includes first-time-in-college dependent undergraduate students who enrolled in a Texas community college in 2008 through 2011 and whose family AGI fell within \$12,000 of the income eligibility threshold for an automatic zero EFC and did not have an AGI at a \$1000 interval. Students who initially enrolled in schools missing a given measure of institutional quality are also omitted. Point estimates from OLS regressions of the dependent variable specified in each column on income-eligibility for the automatic zero EFC. All models also include controls for a linear term in distance from the AGI threshold (allowed to vary on either side of the threshold), parent education, race, gender, age, Texas residency, and entry cohort. Robust standard errors, clustered by initial institution by entry cohort, in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$. "Mean \| ineligible" represents the limit of the expected value of the dependent variable as the AGI threshold is approached from above. Panel A, column 1 dependent variable is the first principal component of the set of displayed measures of institutional quality. Institutional quality measures come from the IPEDS.

Table C.6: The Effect of Automatic Zero Eligibility on Institutional Quality for Returning Community College Students

A. Summary and inputs

		Share of students:	
	(1) First principal component	(2) Receiving Pell	(3) Borrowing
Automatic zero eligible	-0.005	0.032	-0.265
	(0.0326)	(0.220)	(0.221)
Mean | ineligible	-0.379	40.0	16.2
Observations	84,375	84,375	84,375

B. Resources

	Expenditures per FTE:				
	(1) Instruction	(2) Academic support svc.	(3) Student services	(3) Tuition and Fees	(4) Student-faculty ratio
Automatic zero eligible	-17	6	-2	20	0.103
	(49)	(11)	(16)	(17)	(0.082)
Mean | ineligible	5,072	1,089	1,147	2,262	21.0
Observations	84,375	84,375	84,375	84,375	84,375

C. Outputs

	Retention rate			
	(3) Full-time students	(4) Part-time students	(5) 200% graduation rate	(6) Transfer rate
Automatic zero eligible	0.063	-0.071	-0.101	-0.080
	(0.135)	(0.125)	(0.119)	(0.118)
Mean | ineligible	58.3	43.8	19.9	21.1
Observations	84,375	84,375	84,375	84,375

*Note*s: Sample includes returning dependent undergraduate students who enrolled in a Texas community college in 2008 through 2011 and whose family AGI fell within $12,000 of the income eligibility threshold for an automatic zero EFC and did not have an AGI at a $1000 interval. Students who initially enrolled in schools missing a given measure of institutional quality are also omitted. Point estimates from OLS regressions of the dependent variable specified in each column on income-eligibility for the automatic zero EFC. All models also include controls for a linear term in distance from the AGI threshold (allowed to vary on either side of the threshold), parent education, race, gender, age, Texas residency, and entry cohort. Robust standard errors, clustered by initial institution by entry cohort, in parentheses; *** $p<0.01$, ** $p<0.05$, * $p<0.1$. "Mean \| ineligible" represents the limit of the expected value of the dependent variable as the AGI threshold is approached from above. Panel A, column 1 dependent variable is the first principal component of the set of displayed measures of institutional quality. Institutional quality measures come from the IPEDS.

Table C.7: Correlations between Automatic Zero Eligibility and Community College Students' Contemporaneous Financial Outcomes

	(1) EFC=0	(2) Total grant aid	(3) Pell Grant aid	(4) TEXAS Grant aid	(5) Other grant aid	(6) Work-study	(7) Earnings	(8) Loans
A. FTIC students								
Automatic zero eligible	0.425***	451***	376***	26*	51***	-3	-215**	-46**
	(0.018)	(44)	(34)	(14)	(13)	(5)	(97)	(22)
Mean | ineligible	0.46	$4,081	$3,245	$444	$395	$138	$6,212	$544
B. Returning students								
Automatic zero eligible	0.426***	511***	490***	10	12	7	2	-43**
	(0.018)	(46)	(40)	(9)	(13)	(6)	(108)	(22)
Mean | ineligible	0.34	$2,482	$2,195	$27	$259	$55	$11,669	$813

*Note*s: First-time-in-college and returning dependent undergraduate students who enrolled in a Texas community college in 2008 through 2011 and whose family AGI fell within $12,000 of the eligibility threshold for an automatic zero EFC. Students with AGIs at $1000 intervals are excluded. Point estimates from OLS regressions of the dependent variable specified in each column on eligibility for the automatic zero EFC. All models also include controls for a linear term in distance from the AGI threshold (allowed to vary on either side of the threshold), parent education, race, gender, age, Texas residency, and entry cohort. Robust standard errors, clustered by initial institution by entry cohort, in parentheses; *** p<0.01, ** p<0.05, * p<0.1. "Mean \| ineligible" represents the limit of the expected value of the dependent variable as the AGI threshold is approached from above. All dollar amounts adjusted for inflation (2013$).

Appendix D: Calculation of Tax Liabilities

We use the American Community Survey and NBER's TAXSIM to estimate the effect of automatic zero eligibility on federal and payroll tax payments. This appendix first describes the American Community Survey (ACS) sample, construction of TAXSIM inputs, and resulting tax liabilities and marginal rates at different ages and income levels corresponding to the ages and income levels of sample members. We then discuss our method for approximating marginal tax rates that eligible students' earnings gains would be subject to. Finally, we provide descriptive statistics on differences in estimated tax liabilities that would be produced using only the data we have available in our Texas sample versus almost all of the relevant measures of income and household composition that are used to determine actual tax liabilities.

We use data from the 2006 through 2015 ACS and select individuals who fall between the ages of 18 and 31 and were either currently enrolled in college or had attended college in the past. Under the assumption that FTIC students are 18 years old at entry and returning students are between 19 and 22, this age range will cover the ages of our sample members at entry through the end of our panel seven years later. The ACS contains information on marital status and a sample member's children and other dependents as well as her age and her spouse's age. We assume that unmarried individuals without dependents who are enrolled in college and under the age of 24 are claimed as dependents for tax purposes by their parents. The ACS also contains information on the sample member and spouse's earned income, investment income, retirement income, SSI benefits, and welfare and other income-support payments. We assume that 25 percent of investment income comes from dividends and 75 percent comes from interest on checking and savings accounts. We set short- and long-term capital gains, UI benefits, and property income to $0 as these sources of income are not available in the ACS. We assume that 80 percent of reported mortgage payments are interest and that only sample members classified as head of household or their spouse can claim the mortgage interest deduction. Real estate taxes are reported in categories in the ACS, so we use the midpoints of each category to generate a continuous measure. Other itemized expenses and child care costs are set to $0 as these expenses are also not reported in the ACS.

Sample members and the above inputs are read through TAXSIM to generate federal and payroll tax liabilities and marginal rates. We then set all sources of income except for wage and salary income to $0 and recode all sample members as single tax payers without dependents, property tax payments, or mortgage interest to generate a second measure of tax liabilities and marginal rates using only the information that is available in the Texas data.

To calculate the average marginal income tax rate that additional earnings received by automatic zero EFC eligible students in our sample would be subject to, we must make a number of assumptions. First,

as stated above, we assume that FTIC students are 18 years old at entry and 25 by the end of our panel seven years later. Likewise, we assume that returning students are 19 to 22 years old at entry between 26 and 31 by the end of our panel. For each age or age range, we calculate average wage and salary income and the average marginal federal income and payroll tax rate (generated using the full set of information from the ACS and sample weights) within $10,000 wage/salary intervals. For each age or age range, we use the interval with average wage and salary income that is closest to observed average wage and salary income for students in our sample when the automatic zero EFC eligibility threshold is approached from above. Thus, we impute a marginal rate derived from individuals who are similar in age and wage/salary income to barely-ineligible Texas students that is based on measures of income and household composition that are only available in the ACS. Table D.D.1 displays the income rage and average marginal rates selected by this procedure. These rates are then multiplied by estimated impacts on earnings in the corresponding sample and time period to translate automatic zero EFC-driven earnings gains into corresponding additional tax payments (shown in Figure 9).

In a previous version of this paper, we imputed federal income tax liabilities directly (Denning et al. 2017). We assumed that students were single, had no dependents, no deductions, and no income outside of earnings in UI-covered sectors, because these variables were not available in the data we had access to. TWC earnings data cannot leave a dedicated, non-networked machine. Thus, we first generated tables of tax liabilities for $1000 earnings intervals for each of the tax years covered by our panel using NBER's TAXSIM. These estimated liabilities were then matched to sample members based on their earnings (again rounded to the nearest $1000) and calendar year. Using this methodology, we then estimated effects of automatic zero eligibility on year-by-year tax payments over the duration of the panel. These results are included below for FTIC and returning four-year students in Figure D.1.

However, this alternative imputation procedure is likely less accurate for returning students are are more likely to marry, have children, and/or have non-wage/salary income by the end of our panel. To show this, first plot the distribution of the difference between federal income tax payments using only the data we observe in our Texas sample ("imputed") and payments using the full set of measures available in the ACS ("actual") for two age ranges which approximate the ages over which we observe FTIC and returning students' longer-run earnings at the end of our panel (25 years old and 26-31 years old, respectively). We exclude instances where the two measures are the same to better illustrate the two distributions. In the case of 25 year olds, we find no difference between the two measures for 51 percent of the time, while in the case of 26-31 year olds, we find no difference 35 percent of the time.

As can be seen in Figure D.2, differences between imputed and actual tax liabilities, as calculated by TAXSIM, are much smaller for younger individuals. For almost 70 percent of 25 year olds, the difference is

less than $200 in magnitude while for 26-31 year olds, this is the case only 50 percent of the time. Thus, we rely on the method described in the main text and the beginning of this section when estimating effects of eligibility for additional grant aid on tax receipts.

Table D.1: Summary of Marginal Tax Rates Chosen by Imputation Procedure

| | | | | Averages | |
Ages(s)	Wage/salary income range		Wage/salary income	Marginal inc. tax rate	Marginal FICA rate
A. FTIC students					
18	$1,000 -	$11,000	$4,019	1.77	14.92
19	$2,000 -	$12,000	$5,349	2.77	14.92
20	$4,000 -	$14,000	$7,932	5.22	14.90
21	$5,000 -	$15,000	$9,147	6.22	14.88
22	$9,000 -	$19,000	$13,202	9.39	14.87
23	$13,000 -	$23,000	$17,739	12.52	14.90
24	$17,000 -	$27,000	$21,835	15.13	14.89
25	$19,000 -	$29,000	$23,833	16.21	14.90
B. Returning students					
19-24	$6,000 -	$16,000	$10,399	7.25	14.87
20-25	$11,000 -	$21,000	$15,560	11.33	14.89
21-26	$17,000 -	$27,000	$21,762	15.17	14.89
22-27	$21,000 -	$31,000	$25,818	16.34	14.89
23-28	$24,000 -	$34,000	$28,838	16.79	14.87
24-29	$27,000 -	$37,000	$31,796	17.18	14.89
25-30	$29,000 -	$39,000	$33,672	17.49	14.88
26-31	$31,000 -	$41,000	$35,977	17.73	14.89

Figure D.1: Effects of Automatic Zero EFC Eligibility on Alternative Measures of Tax Receipts
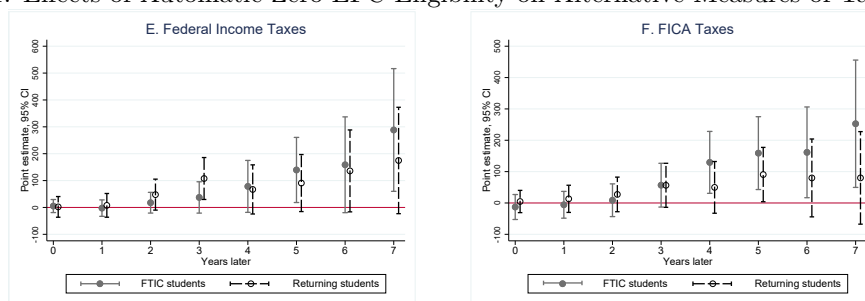
*Note*s: First-time-in-college and returning dependent undergraduate students who enrolled in a four-year Texas public institution in 2008 through 2011 and whose family AGI fell within $12,000 of the eligibility threshold for an automatic zero EFC. Students with AGIs at $1000 intervals are excluded. Point estimates and 95% CI from regressions of estimated federal income taxes (Panel A) or estimated federal payroll taxes (Panel B) on eligibility for the automatic zero EFC, a linear term in distance from the threshold (allowed to vary on either side), and indicators for parent education, race, gender, age, Texas residency, and cohort. Confidence intervals constructed using robust standard errors clustered at initial institution by entry cohort level. Earnings limited to students in UI-covered jobs in Texas. Federal income and payroll taxes imputed using NBER TAXSIM. All dollar amounts adjusted to represent constant 2013$.

Figure D.2: Distribution of the Difference between Imputed and Actual Federal Income Tax Liabilities for 25 and 26-31 Year Olds
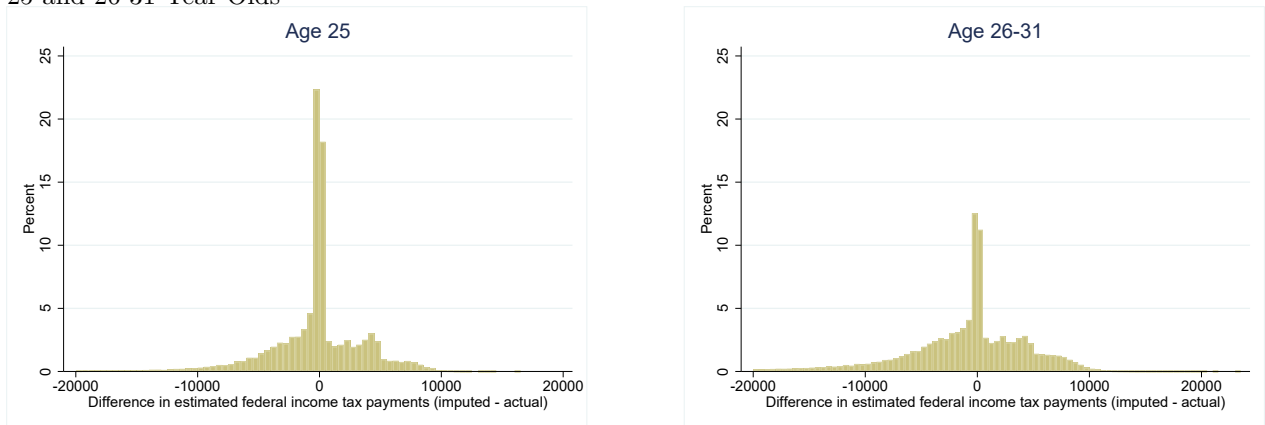
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