Do Public Tuition Subsidies Promote College Enrollment? Evidence from Community College Taxing Districts in Texas

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December 2014

Abstract

We estimate the impact of community college tuition subsidies on postsecondary enrollment using a novel source of variation in tuition sticker price. In many states, community colleges (or two-year colleges) receive support from college taxing districts, which draw funds from local property taxes. In-district college taxing district residents face much lower tuition prices than persons who live nearby but outside college district boundaries. We collect two decades of Texas community college taxing district boundary information and merge this data to large household samples from restricted U.S. Census Bureau, allowing us to identify college taxing district residential status using census blocks. We use two basic approaches to estimate tuition impacts. The first approach uses differences in community college tuition faced by individuals who reside inside and outside local college districts. The second approach uses difference-in-differences methods and compares persons who live in high-subsidy college taxing districts to those who live in low-subsidy college districts. For this version of the paper, we find that the estimated tuition effects depend on the sample. Our estimates are negative and statistically significant for 18 to 24 year olds and persons who are 18 and older.

NOTE TO SOLE REVIEWER: The most recent findings have yet to be reviewed by the U.S. Census Bureau's Disclosure Review Board, so we are not able to include them in this version. However, there are noteworthy analyses in our findings. First, college districts tend to overlap school district boundaries, as shown in the Appendix Figure, we are able to include school district fixed-effects as controls in the new analysis. This allows comparisons of persons who face sharply different tuition prices but are exposed to similar schools. Second, because our restricted census data allow us to pinpoint residential locations at the census block level (about 100 persons reside in a census block), it allows us to construct the first regression-discontinuity estimates of tuition effects on college attendance. If invited to SOLE, we will include these findings in our presentation.

1. Introduction

Despite the large returns to college (Oreopolous, 2013), college attainment rates in the United States have stagnated in recent decades (Turner, 2004), and reversing this trend is an important goal of policymakers. Coinciding with the slowdown in college completion has been a sharp increase in tuition. Over the last twenty years tuition has increased by 60 percent and 115 percent at two- and four-year public colleges, respectively (College Board, 2013b).[2] These tuition increases are one possible factor that might be contributing to lower attainment rates (Deming and Dynarski, 2010). This is especially true for students from disadvantaged backgrounds for whom costs might be an especially large impediment to attending college and who might lack knowledge about financial aid opportunities (Dynarski and Scott-Clayton, 2013).

A large body of literature has emerged on the effect of college costs on student outcomes, with many of these studies focusing on the impacts of financial aid programs.[3] In contrast, there are fewer studies that focus on the effects of changes in the "sticker price" charged by colleges, despite the attention increases in tuition have received from policymakers and the public.[4] There are even fewer studies examining the impact of variation in community college tuition despite the fact that most undergraduates in the U.S. initially enroll in a community college (Berkner and Choy, 2008).[5]

This paper uses a novel source of variation to identify the effect of tuition on college attendance generated by community college taxing districts (CCTD). In many states, community colleges are funded in part through local property taxes and tuition is set at the CCTD level. In the state we use for this analysis, Texas, local property taxes generate at least $1 billion annually for community colleges, or 30 percent of the total revenue for community

[2] Declining state appropriations for higher education partially explain these increases. For instance, from 2007-2008 to 2012-2013 total state appropriations declined by 19% (College Board, 2013a), while over this period community college tuition increased by 25 percent and four-year college tuition increased by 27 percent.

[3] See Deming and Dynarski (2010), Dynarski and Scott-Clayton (2013), and XXX for reviews of this literature.

[4] This literature has produced a range of estimates varying from a four percentage point decrease in enrollment for a $1000 dollar increase in tuition (Leslie and Brinkman, 1987; Neill, 2009) up to a 16 percentage point decrease (Kane, 1995). Studies including Kane (1994, 1995), Cameron and Heckman (2001) use variation in tuition within states over time and control for state and year fixed effects, although there still may be bias if there are changes in average tuition rates that are also correlated with changes in unobserved state-level variables (e.g., unmeasured changes in labor market conditions) that influence the probability of college enrollment (Card and Lemieux, 2000).

[5] The studies on the effects of community college tuition generally find that community college enrollment is more sensitive to changes in tuition than is enrollment in four-year colleges (Kane, 1995; Cameron and Heckman, 2001; Rouse, 1994). Nutting (2008) finds that enrollment in academic programs at community colleges is more responsive to tuition changes than it is for vocational programs.

colleges from the state or local governments. Further, CCTDs do not cover the entire state, so some residents do not live inside any CCTD. These individuals are charged higher tuition to attend a college in a CCTD than are residents of that CCTD. Across the state, there is wide variation in both the in-district tuition as well as the difference between the in- and out-of-district tuition.

We exploit this type of variation to estimate the effect of tuition rates on college attendance. In particular, we estimate models that relate college enrollment to the interaction between CCTD residence and the in- and out-of district tuition difference. This type of model allows us to control for many potential confounds that are related to the "main effects" of residing in a particular CCTD, the levels of in- and out-of district tuition, and the difference between in- and out-of-district tuition. In future versions of the paper, we will also exploit variation in the tuition someone would face that arise from changes over time in the coverage of CCTDs that result from CCTD expansions.

To implement this research design, we use twenty years of geocoded data on community college district boundaries merged to restricted-use data from the 1990 and 2000 Census and 2004 – 2010 American Community Surveys (ACS). Crucially, these ACS and Census data have very detailed information on where an individual lives. Specifically, the data identify the Census block in which an individual resides. Since only about 100 people live in a Census block, we are able to accurately determine whether an individual lives in a particular CCTD, as well as create precise measures of the distances to CCTD boundaries and to different community college campuses.

Based on our estimates from the main empirical model, a $1000 increase in tuition is estimated to statistically significantly decrease college enrollment rates of 18-24 year olds by 5.4 percentage points for the 2000 Census sample. The point estimates for the 1990 Census and 2004 – 2010 ACS 18-24 year old samples, while negative, are small and imprecise. Estimates from the 1990 and 2000 Census samples of adults 18 and older imply that a $1000 increase in tuition will statistically significantly decrease college enrollment rates 3.3 and 2.1 percentage points, respectively. The estimated effect of the tuition rate for the 2004 – 2010 ACS of individuals 18 and older while negative is not statistically significant.

There is however, substantial heterogeneity in the estimated effect by the poverty level of the household of the individual. In fact the estimated effect is either positive or if negative, not statistically significant for individuals living in households below 200% of the

poverty level. This may be due to the fact that tuition rate increases for these low income individuals may be offset, at least partially, by increases in the amount of Pell grants that they qualify for.[6] However, for individuals in families whose income places them at 200% of the poverty level or above, the estimated effects are always negative, and mostly statistically significant, and imply that a $1000 increase in tuition will decrease enrollment by from between 2.4 and 11.5 percentage points depending on poverty level group and sample for individuals between 18 and 24 years old and from between 0.7 and 5.6 percentage points for individuals ages 18 and older.

2. Higher Education in Texas

Texans have a wide-ranging menu for college choice. Texas has both an extensive system of public four-year colleges and comprehensive system of public community colleges. More than half of those in public post-secondary education in Texas are enrolled at two-year colleges as compared to about 40% nationally (U.S. Department of Education, 2014).[10] Texas public community colleges receive funding revenue primarily from three sources: tuition and fees, state appropriations and property taxes.[11] In Texas and other states, community college taxing districts are a pillar of public college financing. Community college taxing districts (CCTD) are special-purpose taxing districts designed to help finance brick-and-mortar public two-year colleges serving the postsecondary education and workforce development needs of a region. Most states organize their public community colleges around such districts (Cohen and Brawer, 2003).

[6] For example, in 2014 a family of 4 with 1 dependent child in college would qualify for the up to the maximum Pell amount if family income was 100% the poverty level, up to about $3500 if family income was 200% the poverty level, and not qualify for a Pell if the family income was 300% of poverty level or higher.

[10] Undergraduate enrollment at 4-year public institutions in Texas was over 461,000 in the Fall of 2013 while enrollment in 2-year public institutions was about 720,000 (Texas Higher Education Coordinating Board, 2014).

[11] State appropriations for community colleges can be used only to support general instructional or administrative costs, while revenue generated from property must go toward supporting and maintaining infrastructure. Schools are unrestricted in their use of tuition.

Fifty taxing districts in Texas assess local property taxes to support and maintain infrastructure. Figure 1 provides an illustration of Texas districts in 2010. As can be seen from the figure, a substantial fraction of the geographical area of Texas is not located in a CCTD.[12] Virtually every metropolitan area in Texas, however, is located within a CTTD.

In return for local support, CCTD residents typically face lower, more favorable in-district tuition rates at an affiliated college, compared to others.[13] In FY2013, total revenues for Texas community colleges equaled $5.1 billion. Of this $1.6 billion was through local property tax revenues, $1.2 billion was from state appropriations, and $860 million was from net tuition revenues.[14]

3. Data

This paper employs data from the 1990 and 2000 U.S. Decennial Censuses 1% and 5% sample and data from the 2004 – 2010 American Community Surveys (ACS) for the state of Texas along with GIS data mapping the CCTD boundaries for Texas over the 1991-2010 period and data on the census block location of community colleges over the same period of time.

To map the boundaries we first determined the 1991 Texas CCTD boundaries. Evidence used to construct the boundaries included publicly available documents such as community college websites and course catalogs; for those without publicly available documents, relevant appraisal districts and colleges themselves were consulted for further information. Most CCTDs follow the boundaries of constituent entities, commonly counties or independent school districts

[12] In 1995, the state legislature designated "service areas" for each community college to ensure that all areas would have access to public colleges (TACC, 2006). It is important to bear in mind that the introduction of these college service areas does not affect the cost structure faced by individuals. Enacting service areas would erect barriers in the sense of preventing other colleges from competing spatially. However, individuals are still free to choose to attend any two-year college but must pay the out-of-district costs.
[13] State law requires out-of-district and out-of-state tuition to be at least as high as in-district tuition (TEC 54.051).
[14] See http://www.thecb.state.tx.us/index.cfm?objectid=5026C14D-FD20-B6E6-9AA684EC8FFB08D8.

(ISD). A few are based on city limits, while others are unique entities or are composites of counties, ISDs, or cities.

Once the 1991 boundaries were determined, the next step was to identify which CCTDs had undergone boundary changes in the period of interest. CCTDs may change due to an annexation approved by voters, or due to a change in the constituent entities. If college documents detailed the history of the CCTD and made clear there were no changes, these CCTDs required no further investigation. For others, appraisal districts and colleges were contacted via open records request for descriptions of the boundaries and any changes (including location and date of the change) made since 1991. Relevant appraisal districts were identified through the Appraisal District Directory maintained by the Texas Comptroller (see http://www.window.state.tx.us/propertytax/references/directory/cad/).

Using the confidential census block identifiers in the Census and ACS data along with the GIS CCTD boundary data, we calculated the distance to every community college main campus in Texas and the (closest) distance to every community college taxing district for each household in the three sets of data.[15]

We collected information on tuition rates from several sources. The Texas Association of Community Colleges (TACC) maintains tuition and fee data for in-district and out-of-district fulltime students at each community college taxing district located in Texas for academic years 1997 through 2010. Since the sample period of the study includes years before 1997, a public information request survey was mailed to each taxing district in order to backfill the sample data. The survey included a request for tuition and fee data for fulltime students, as well as information regarding any out-of-district fees assessed for students who reside outside of the community college taxing district. We received tuition

[15] For individuals living within a particular CCTD the distance to the boundary of that CCTD is denoted by a negative number.

and fee data for each of the taxing districts, as well as catalogs and documentation for most academic years. From this data we determined the tuition rate (per semester) an individual would face if they attended full-time (15 credits) a community college (in 2010 constant dollars) if they lived in the CCTD or if they lived outside the CCTD.

Finally, using this geographic location information and the community college tuition data, for individuals who reside in a CCTD we assign to them the in-district full-time tuition rate. For individuals who do not live in any CCTD, the tuition rate assigned to them is the tuition they would have to pay for full-time attendance at the community college in the CCTD that is closest to them. Individuals who do not live in a CCTD pay a higher tuition rate than those who do. Figure 2 presents the tuition rate for adults who live in a particular CCTD versus the tuition rate for those living outside the particular CCTD for all CCTDs in Texas in 2010. The difference between living outside a CCTD and living inside a CCTD are presented in Figure 3. As can be seen in this figure there is substantial variation in the tuition differences across the CCTDs ranging from $0 for Weatherford BMD and Frank Phillips BMD to $1565 for Austin.

The data contains those living in a housing unit or non-institutionalized group quarters, which includes both college dormitories and college quarters off campus (Census, 2007) and excludes those in institutionalized group quarters (e.g., prisons).[16] Among individuals aged 18-24 in Texas with a high school degree or GED who don't have a

[16] Non-institutionalized group quarters also includes group homes, religious group quarters, military quarters, agriculture workers' dormitories, other workers' dormitories, dormitories for nurses and interns in general and military hospitals, job corps and vocational training facilities, emergency and transitional shelters, shelters for children who are runaways, neglected, or without conventional housing, shelters for abused women, soup kitchens, crews of maritime vessels, residential facilities providing 'protective oversight', staff residents of institutions, regularly scheduled mobile food vans, targeted non-sheltered outdoor locations, other non-household living situations, and living quarters for victims of natural disasters.

postsecondary degree, 8.55% live in non-institutionalized group quarters while 0.40% of individuals 25 and older do.[17]

Since we are interested in the effect of community college tuition rates on college attendance, our samples were restricted to those individuals 18 and older that have either at least high school diploma or a GED, but have no post secondary degree such as an AA, BA, MA or PhD. This results in samples sizes of about 710,400, 1,059,400, and 440,900 for the 1990 Census, 2000 Census, and 2004-2010 ACS data, respectively.

The Census and ACS data have information about whether an individual has attended a college in the previous three months. Additionally there is information about whether the college they attend is public or private. Unfortunately there is no information contained in the Census or ACS data about whether the individual attended a community college or a four-year university. Since the tuition differences between those living inside a CTTD and those living outside a CCTD refer to public community colleges we also estimated models focusing on enrollment in a public post-secondary institution.[18]

In 1990 Census sample, around 51% of individuals 18 years and older who graduated high school but had no post-secondary degree lived inside a community college taxing district. For the 2000 sample this percentage had increased to 56% while the percentage further increased to 63% for the 2004-2010 ASC sample. Table 1 presents summary statistics broken down broken down by whether or the individual lives in a CCTD. As can be seen from the table, while there are no substantial differences between those living in CCTDs and those living outside CCTDs in the fraction of 18-24 year olds attending any

[17] For individuals attending college in Texas, 15.53% of those aged 18-24 and 0.87% of those 25 and older live in non-institutionalized group quarters.

[18] Data from the 2009 Integrated Postsecondary Education Data System show that for Texas in the fall of 2008, 54,881 students enrolled full-time in public two-year colleges while 10, 705 enrolled full-time in private for-profit institutions. The corresponding numbers for part-time enrollment are 47,108 and 826, respectively.

college, among individuals 18 and older the fraction attending any college is generally higher for those living inside as opposed to outside the CCTD. For example, in 1990 the fraction of individuals 18 and older attending college was 13.6% for those residing in a CCTD as opposed to 12.5% for those not residing in a CCTD. For 2000 the difference was about 1.9 percentage points (9.9% versus 8.0%) and for the 2004-2010 period the difference was 2.2 percentage points (11.9% versus 9.7%).

The average age of adults residing in CCTD's is younger than those not residing in any CCTD (40.6 versus 41.4 in the 1990 Census, 42.3 versus 44.5 in the 2000 Census and 40.13 versus 42.1 in the 2004-2010 ACS). There has been a dramatic change in the ethnic makeup in Texas over the last few decades and this is reflected in the samples. In the 1990 Census sample the percentage of whites equaled 82.8. This decreases to 64.5% in the 2000 Census sample and further to 57.3% in 2004-2010 ACS sample. While the fraction of Blacks has remained relatively stable over this time period, the fraction of Hispanics has increased dramatically, from 5.45% in the 1990 Census sample to 21.9% in the 2000 Census sample and 27.9% in the 2004-2010 ACS sample. Among those living in CCTDs, the fraction of whites is lower than among those not living in a CCTD and this difference has been increasing over time. In the 1990 Census sample the fraction of whites living in a CCTD was 7.6 percentage points lower than those not living in a CCTD. This difference increased to 17.0 percentage points in the 2000 Census sample and to 19.0 percentage points in the 2004-2010 ACS sample.

While the fraction of individuals in households whose income is at least 500% the poverty level was larger for those living in CCTDs in the 1990 Census sample (23.1 versus 19.7) in the 2004-2010 ACS sample the fraction of individuals in households whose income

is at least 500% the poverty level was lower for those living in CCTDs versus those not living inside a CCTD (24.2 versus 26.6). For additional results see Table 1.

4. Methodology

To examine the effect of tuition rates on the probability of attending college we estimated a series of linear probability models. The main source of tuition variation that we exploit is the variation arising from the fact that individuals living inside community college taxing districts face lower tuition rates than those living outside a community college taxing district. With the 1990 and 2000 Census data we estimate the model

$$y_i = \alpha T_{ij} + \beta' \mathbf{x}_i + \delta_j + \varepsilon_i \qquad (1)$$

where T_{ij} is the tuition faced by individual i whose closest taxing district is j, $\boldsymbol{x}_i$ is a vector of characteristics of individual i, δ_j is a fixed effect for the j^{th} CCTD and ϵ_i is the error term. Since the ACS data pools data from 2004 to 2010 we estimate

$$y_{it} = \alpha T_{ijt} + \beta' \mathbf{x}_{it} + \delta_j + \mu_t + \varepsilon_{it} \qquad (2)$$

where T_{ijt} is the tuition faced by individual i whose closest taxing district is j in year t, $\boldsymbol{x}_{it}$ is a vector of characteristics of individual i in year t, δ_j is a fixed effect for the j^{th} CCTD, μ_t is a year effect, and ϵ_{it} is the error term. We can identify the effect of T_{ij} on enrollment in the Census data, even though there is no time-variation in tuition rates, because individuals who live inside the jth CTTD face a lower tuition rate than those whose closest CCTD is j but live outside any CCTD.

In addition to the tuition rate faced by an individual, we also controlled for several other factors that may influence whether an individual attends college. In particular, we controlled for an individual's age, race, gender, and the interaction of race with gender,

whether the individual has a disability, the individual's place of birth (Texas, outside Texas in United States, outside United States), whether the household migrated within the last five years for the Census data and within the last year for the ACS data (migrated, migrated within Texas, migrated across counties within Texas), household poverty status (< 100% poverty level, 100%-199% of poverty level, 200%-299% of poverty level, 300%-399% of poverty level, 400%-499% of poverty level, 500%+ poverty level) and weeks worked in the previous year. We also include as a control in our estimations the distance from the census block in which an individual resides to the closest community college since individuals who live further from a college are, all else equal, less likely attend college but are also more likely to live outside a CCTD and, hence, pay a higher tuition rate.

We estimate models first by restricting the sample to individuals 18 – 24 years old. These are the ages that individuals traditionally attend college. In other estimations, we include all adults 18 and older. In order to investigate whether the effect of tuition rates on the probability of college attendance varies by different subgroups we also estimated models that included as control variables, interactions of the tuition variable with, race, gender, and poverty status. In all our estimates we cluster the standard errors at the Census tract level.

These regression models will yield unbiased estimates of the effect of tuition rates on college attendance only if there are no uncontrolled differences related to both the probability of college attendance and tuition rates. To test the sensitivity of the estimates, an alternative model is estimated that identifies the effect of tuition rates on college attendance by using variation across CCTDs in the tuition differences between those living within the CCTD and those living outside a CCTD. Define the subsidy amount that an individual receives as the difference between the out-of-district tuition rate and the actual tuition rate that an individual pays. The subsidy of individuals living outside a CCTD is then equal to 0

while the tuition subsidy for those living within a CCTD is equal to the difference between the out-of-district and in-district tuition rate. The subsidy effect is estimated by comparing differences in the probability of attending college between those living inside a CCTD with a subsidy above the median subsidy level to those living inside a CCTD with a subsidy below median subsidy level. The implicit assumption is that for both low subsidy and high subsidy CCTDs those living inside the CCTD may differ from those living outside the CCTD for unobserved differences that may be correlated with college attendance, but only those living in a high tuition subsidy CCTD are directly affected by the tuition subsidy.[19] Let HS_{ij} be a dummy variable that equals one if an individual *i* resides in a high tuition subsidy taxing district *j* and equals zero, otherwise. Also let I_{ij} be a dummy variable that equals 1 if an individual *i* lives in taxing district *j* and equals 0 otherwise. The model is then for the Census data

$$y_i = \alpha HS_{ij} + \boldsymbol{\beta}'\mathbf{x}_i + \rho I_{ij} + \delta_j + \varepsilon_i \qquad (3)$$

where the parameter α measures the effect of the tuition subsidy on the probability of college enrollment. For the ACS data we have

$$y_{it} = \alpha HS_{ijt} + \boldsymbol{\beta}'\mathbf{x}_{it} + \rho I_{ijt} + \delta_j + \mu_t + \varepsilon_{it}. \qquad (4)$$

5. Empirical Results

Table 2 presents the main estimation results for the 1990 Census, 2000 Census, and 2004-2010 ACS samples. Columns (1) and (2) report the estimates from the models in eqautions (1) and (2) when the sample is restricted to traditional college students aged 18-24

[19] Alternatively, all else equal, the difference between those living within a low subsidy CCTD and those living outside the CCTD could equal $\eta + \alpha_l$ and the difference between those living within a high subsidy CCTD and those living outside the CCTD could equal $\eta + \alpha_l + \alpha_h$ where η are unobserved differences in college attendance probabilities unrelated to tuition. The parameters η and α_l, however, are not separately identified.

years old while columns (3) and (4) report the estimates for the sample of adults aged 18 and older. The estimates presented in panel A have college attendance as the dependent variable while the estimates shown in panel B have public college attendance as the dependent variable. Columns (1) and (3) report estimates when the distance to the closest community college is excluded as a control variable while columns (2) and (4) report estimates when the distance to the closest community college is included as a control variable.

As can be seen from column (1) of panel A, when the distance to the closest community college is excluded from the estimations the estimated effect of an increase in community college tuition on college attendance for traditional college students is negative and statistically significant for all three samples with point estimates implying that a $1000 increase in (semester) tuition rates would lower the college enrollment rates of traditional age students from between 4.0 and 12.2 percentage points.

Including distance to the nearest community college as a control variable, however, leads to a substantial reduction in the estimated magnitude of the effect of tuition on the probability of college enrollment of traditional age students. As can be seen from column (2) of panel A, only the estimated effect for the 2000 Census sample remains statistically significant and implies that a $1000 increase in tuition would decrease enrollment by 5.4 percentage points.

Columns (3) of panel A report the results for the full sample of adults when distance to the closest college is excluded from the regressions. The estimated effect of the tuition rate is negative and statistically significant for all samples. More specifically, the estimated effect of a $1000 dollar increase in the tuition rate on enrollment ranges from a decrease in enrollment of 7.3 percentage points for the 1990 Census sample to a decrease in enrollment of 1.4 percentage points for the 2004-2010 ACS sample. When distance to the closest college

is included in the estimations, the estimated effects are smaller in magnitude but remain statistically significant for the 1990 and 2000 Census samples. The estimated effect of a $1000 tuition increase is a decrease in enrollment of 3.3% for the 1990 Census sample and 2.1% for the 2000 Census sample.

The results when focusing on enrollment in public colleges reported in Panel B are similar to those in Panel A albeit smaller in absolute value. Again, controlling for distance to the closest community college reduces the magnitude of the estimated effect of tuition.

To check whether there is any evidence of heterogeneous effects of community college tuition rates on college enrollment, models were estimated that included interactions of the tuition variable with the race, gender, and poverty level variables. The estimated marginal effects of tuition on college enrollment by race, gender, and poverty level are presented in Tables 3 – 5, respectively. For the sake of brevity we shall focus only the results of estimations that control for distance to the closest community college that are reported in columns (2) and (4) of the tables.

Looking first at the probability of attending any college, at conventional levels of statistical significance there is evidence of differential effects of tuition by race for the 1990 Census and 2000 Census samples but not for the 2004-2010 ACS sample. For the 1990 Census sample of individuals 18 and older, the estimated effect of tuition on college enrollment varies by race with whites being the only group where the tuition rate has a statistically significant negative effect on college enrollment. The point estimate for whites implies that a $1000 dollar increase in tuition would decrease the probability of college enrollment by 4.1 percentage points.

For the 2000 Census sample of 18 to 24 year olds, there is statistical evidence of racial differences in the estimated effect of tuition rate on college enrollment with the

estimate effects being negative and statistically significant for Native Americans, Asian Americans, and Hispanics. The point estimates imply that a $1000 increase in tuition would decrease the probability of college enrollment by 14.6%, 7.6%, and 9.2% for Native Americans, Asian Americans, and Hispanics, respectively.

When enrollment in a public college is the outcome variable, the empirical results with respect to heterogeneous effects of tuition rates are similar to those when enrollment in any college is the dependent variable. One difference, however, is that for the 2000 Census sample of 18-24 year olds the estimated effect of the tuition rate, while still negative, is smaller in magnitude and no longer statistically significant for Asian Americans.

The only statistically significant evidence of gender differences in the estimated effect of tuition rates on the probability of college enrollment is for the 1990 Census sample of individuals 18 and older where the estimated decrease in enrollment for an increase in tuition is larger for males than females. For all colleges, the point estimate for males implies that a $1000 increase in tuition would decrease the probability of enrollment by 3.9 percentage points while for females the estimated decrease is 2.5 percentage points. The later estimated effect, however, is not statistically significant. When focusing on public college enrollment the estimation results are similar except the point estimates are smaller in magnitude for both males and females, with the estimated effect for males now only statistically significant at the 10% level.

The results of testing for heterogeneous effects by poverty level are presented in columns (2) and (4) of Table 5 when a control for distance to the closest community college is included in the estimations. In general, there are statistically significant differences in the estimated effect of tuition rates on college enrollment for all samples, except for the 1990 sample of 18-24 year olds when the outcome variable is any college enrollment. The

estimated effect of tuition is always positive and in many cases statistically significant for individuals in households at less than 100% the poverty level. For individuals in households between 100 and 199% of the poverty level, the estimated effect is both positive and negative depending on which sample is used and the outcome variable but is never statistically significant. For individual in households between 200% and 299% of the poverty level, the point estimates are always negative and mostly statistically significant while for individuals in households between 300% and 399% of the poverty level the point estimates are negative and always statistically significant for the 2000 Census and 2004-2010 ACS samples and negative and statistically significant for the 1990 Census sample of adults 18 and older. For the 1990 Census sample of 18 to 24 year olds the point estimates are not statistically significant. For individuals in households with income either between 400% and 499% of the poverty level or at 500% of the poverty level and above, the estimated effect is always negative and statistically significant.

Turning to the implied impacts for the 2000 Census sample of 18 to 24 year olds, the estimated effect of a $1000 increase in tuition rate on the probability of college enrollment is a statistically significant 11.2 percentage points for those individuals in households at less than 100% the poverty rate. For those individuals in households between 100% and 199% of the poverty level the estimated impact is negative but not statistically significant. For those between 200% and 299%, 300% and 399%, 400 and 499%, and 500% or above the poverty level the estimated effect is a decrease of 10.0, 11.5, 9.3, and 10.5 percentage points, respectively, in the probability of enrollment in any college.

For the 2004-2010 ACS sample of 18-24 year olds, the estimated effect of a $1000 increase in tuition on the probability of college enrollment for those less than 100% the poverty rate is a statistically significant increase of 8.3 percentage points. For those

individuals in households between 100% and 199% of the poverty level, the estimated impact is negative but not statistically significant. For those individuals in households between 200% and 299%, 300% and 399%, 400 and 499%, and 500% or above the poverty level the estimated effect is a decline of 2.4, 3.2, 5.3, and 3.3 percentage points, respectively, on the probability of enrollment in any college.

For the 1990 Census sample of 18 to 24 year olds the only statistically significant estimate is that associated with those at less then 100% of the poverty level and implies that a $1000 increase in tuition would increase probability of enrollment in any college by 9.6 percentage points. The pattern of estimated effects when the outcome variable is enrollment in a public college is similar to those for enrollment in any college. See table 5 for details.

For individuals 18 and older, the estimated effect of a $1000 increase in tuition rates on the probability of enrollment in any college for those at less than 100% of the poverty level is a 5.4, 8.6, and 3.5 percentage point increase for the 1990 Census, 2000 Census, and 2004-2010 ACS samples, respectively. For those between 100-199% of the poverty level the estimated impact is not statistically significant for any sample. For the 1990 Census, 2000 Census, and 2004-2010 ACS samples, the estimated impact for individuals living in households with income between 200 and 299% of the poverty level, is a statistically significant 4.8, 3.2, and 0.7 percentage point decrease in the probability of college enrollment, respectively, while the estimated impact for those living in households with income between 300 and 399% the poverty level is a statistically significant 4.6, 3.6, and 0.7 percentage point decrease in the probability of college enrollment, respectively. For individual living in households with income between 400 and 499% of the poverty level and for those living in households with income at 500% the poverty level or above, the corresponding estimated impact of a $1000 increase in tuition on the college enrollment are

negative and statistically significant and equal 5.2, 3.7 and 1.0 and 5.6, 3.8, and 1.1 percent for the 1990 Census, 2000 Census, and 2004-2010 ACS samples, respectively. The pattern of estimated effects for adults 18 and older when the outcome variable is attending a public college is similar to those for enrollment in any college. See table 5 for details.

As mentioned above one potential limitation of the above analysis is that there may be unmeasured differences correlated with tuition rates between locations within a CCTD and locations outside CCTDs that are related to college enrollment. If this is the case then the estimated effect of community college tuition rates on college enrollment will be biased. To address this possibility we estimated the models described either by equations (3) for the 1990 and 2000 Census or (4) for the ASC both for those aged 18 to 24 and for adults 18 and older.

Model estimates are presented in Table 6 where columns (1) and (3) ((2) and (4)) present model estimates without (with) controls for distance to the closest community college and columns (1) and (2) ((3) and (4)) estimate models for adults aged 18 to 24 (18 and older). In panel A the dependent variable is enrollment in any college while in panel B the dependent variable is enrollment in a public college. For the sake of brevity we shall discuss only those estimation results that include distance to the closest community college as a control variable. Recall that we are focusing on tuition subsidies instead of tuition rates so the sign of the coefficient associated with the tuition subsidy variable should be the opposite of sign of that associated with the tuition rate variable

The estimated effect of residing in a CCTD with a high subsidy on the probability of enrollment in any college is positive and statistically significant for all samples of 18-24 year olds with estimates ranging from 0.029 for the 2004-2011 ACS sample to 0.069 for the 2000 Census sample. For the samples of individuals 18 and older, the estimates are also positive

statistically significant but smaller in magnitude ranging from 0.010 for the 2004-2010 ACS sample to 0.021 for the 1990 Census sample. The estimated effect of a high tuition subsidy when the dependent variable is enrollment in a public college are all positive and statistically significant and the point estimates are at least as large as the estimates as when the dependent variable is enrollment in any college.

As shown in Table 7, there is statistically significant race differences in the estimated effect of a high tuition subsidy for the 2000 Census and 2004-2010 ACS samples, while as seen in columns (2) and (4) of Table 8, there are no statistically significant gender differences at conventional significance levels. Table 9 reports the results of tests for differences in the effect of a high tuition subsidy on the probability of enrollment by poverty level. Here we see that there are statistically significant differences the estimated effect of tuition subsidies on the probability of enrollment by poverty level for all samples except the 1990 Census sample of 18 – 24 year olds and the 2000 Census sample of adults 18 and older when the outcome variable is enrollment in any college.

6. Discussion and Conclusions

This paper exploited the variation in tuition rates between those living in community college taxing districts and those living outside community college taxing districts in Texas to estimate the effect of tuition on college enrollment. Overall, there was evidence that increases in tuition rates statistically significantly reduced the probability of enrollment but further estimations revealed that the effect is mainly concentrated among individuals living in households whose income was equal to 300% or more of the poverty level. One limitation of this study is that the Census and ACS data do not distinguish between those who are attending community colleges and those attending four-year colleges and those

attending. Lowering the community college tuition rate may cause some individuals to switch from attending a four-year college to attending a two-year college. While the extent of this cannot be determined from this data, in ongoing research of ours we are using administrative data from the UT-Dallas Education Research Center to estimate the magnitude of this "crowd-out" effect (also see McFarlin, 2007).

Another issue not addressed in this paper is the extent to which changes in tuition rates also affect college persistence and graduation rates and ultimately individual earnings levels. This is left to future research. We also did not exploit the fact that over time some community college taxing districts in Texas have been expanding. Thus, individuals living in certain geographic region may have outside any CCTD at one point in time but be within a CCTD at a latter point in time. This variation could form the basis of a difference in differences estimation. Again, we leave this to future research.

Finally, while we controlled for distance to the nearest community college, we did not include controls for distance to the closest four-year college. In future research, we plan to check the robustness of our findings to adding this measure as a control variable. We also are planning to investigate whether distance to the closest four-year college has a moderating effect on the impact of changes in community college tuition rates on college enrollment. Further, we are planning in the future to look at narrower distance bands around the community college and to look more explicitly at differences between traditional and non-traditional students.

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Figure 1

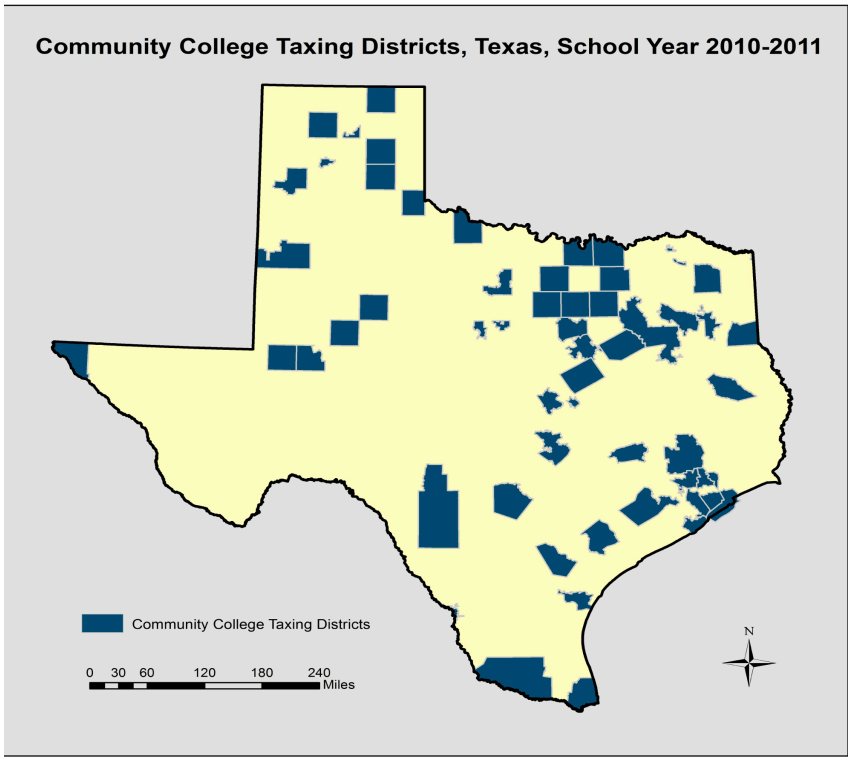
Community College Taxing Districts, Texas, School Year 2010-2011
Community College Taxing Districts
0 30 60 120 180 240
Miles
N

Figure 2

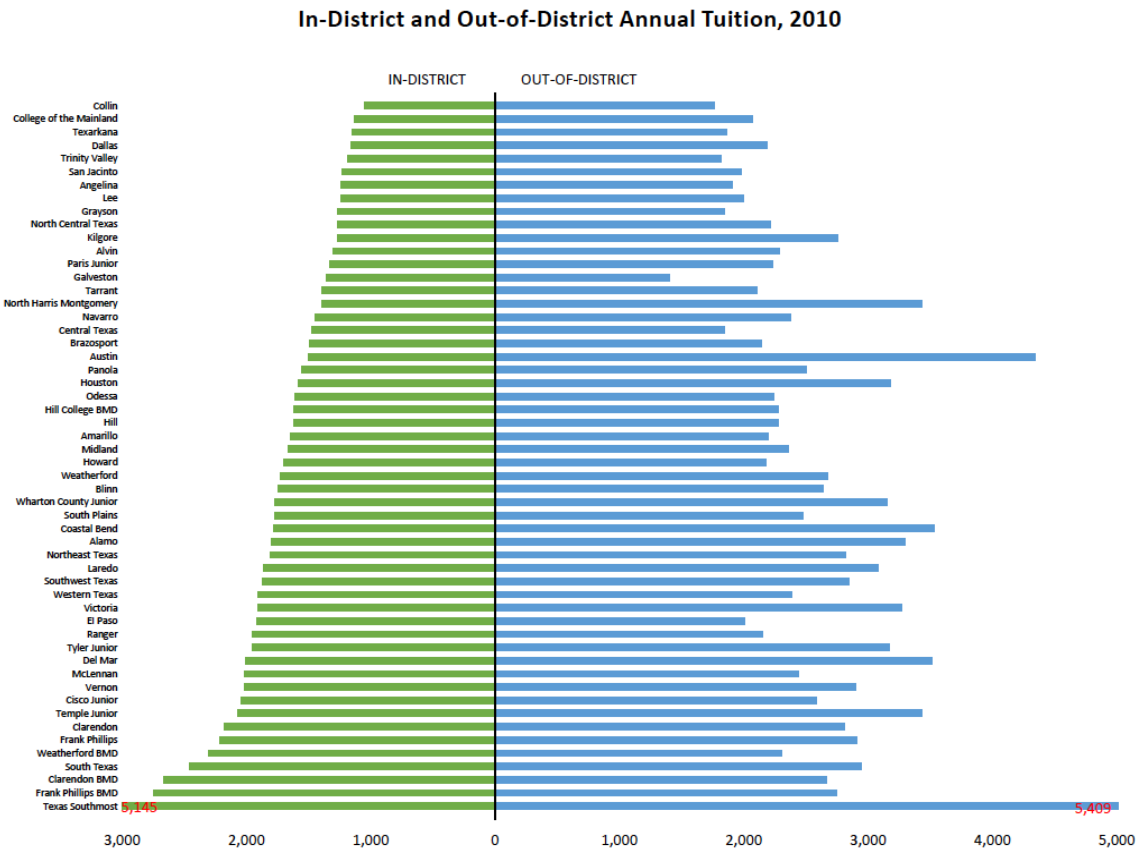
In-District and Out-of-District Annual Tuition, 2010
IN-DISTRICT
OUT-OF-DISTRICT
Collin
College of the Mainland
Texarkana
Dallas
Trinity Valley
San Jacinto
Angelina
Lee
Grayson
North Central Texas
Kilgore
Alvin
Paris Junior
Galveston
Tarrant
North Harris Montgomery
Navarro
Central Texas
Brazosport
Austin
Panola
Houston
Odessa
Hill College BMD
Hill
Amarillo
Midland
Howard
Weatherford
Blinn
Wharton County Junior
South Plains
Coastal Bend
Alamo
Northeast Texas
Laredo
Southwest Texas
Western Texas
Victoria
El Paso
Ranger
Tyler Junior
Del Mar
McLennan
Vernon
Cisco Junior
Temple Junior
Clarendon
Frank Phillips
Weatherford BMD
South Texas
Clarendon BMD
Frank Phillips BMD
Texas Southmost
5,145
5,409
3,000
2,000
1,000
0
1,000
2,000
3,000
4,000
5,000

Figure 3

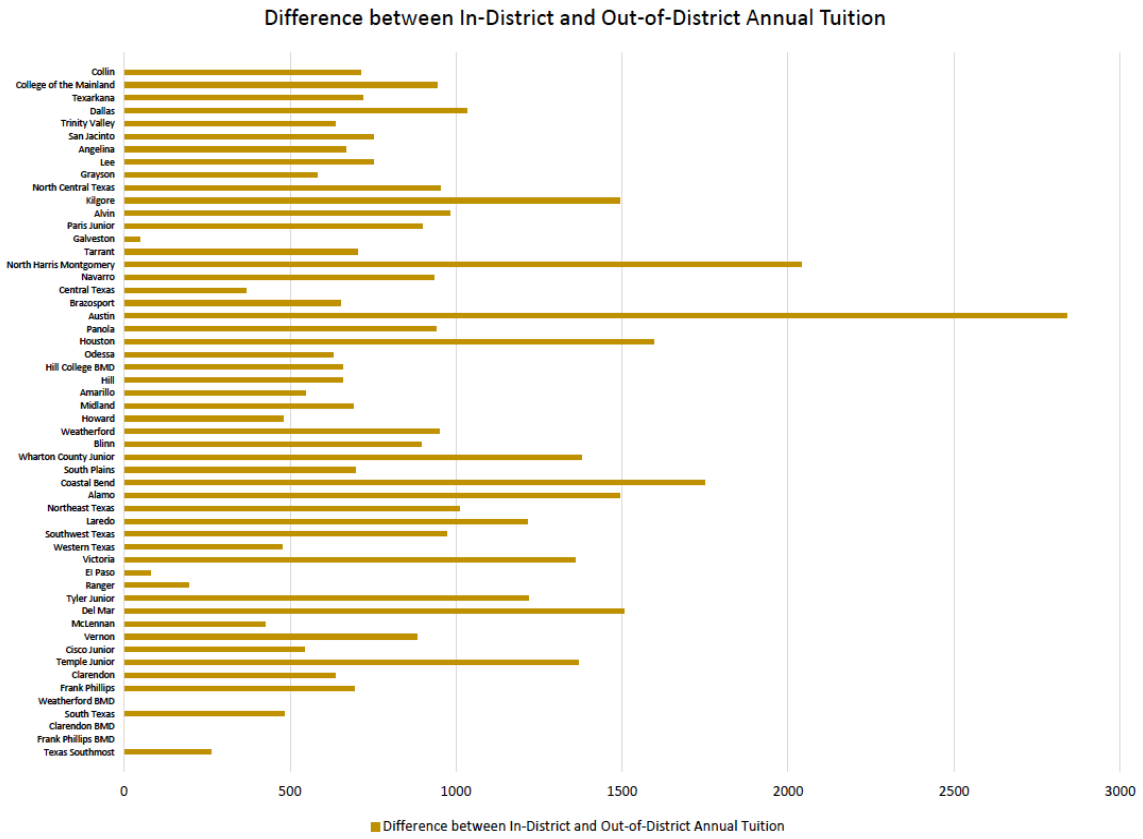
Difference between In-District and Out-of-District Annual Tuition
Collin
College of the Mainland
Texarkana
Dallas
Trinity Valley
San Jacinto
Angelina
Lee
Grayson
North Central Texas
Kilgore
Alvin
Paris Junior
Galveston
Tarrant
North Harris Montgomery
Navarro
Central Texas
Brazosport
Austin
Panola
Houston
Odessa
Hill College BMD
Hill
Amarillo
Midland
Howard
Weatherford
Blinn
Wharton County Junior
South Plains
Coastal Bend
Alamo
Northeast Texas
Laredo
Southwest Texas
Western Texas
Victoria
El Paso
Ranger
Tyler Junior
Del Mar
McLennan
Vernon
Cisco Junior
Temple Junior
Clarendon
Frank Phillips
Weatherford BMD
South Texas
Clarendon BMD
Frank Phillips BMD
Texas Southmost
0
500
1000
1500
2000
2500
3000
Difference between In-District and Out-of-District Annual Tuition

Table 1
Summary Statistics

	1990 Census		2000 Census		2004-2010 ACS	
	Inside CTTD	Outside CCTD	Inside CTTD	Outside CCTD	Inside CTTD	Outside CCTD
Characteristics	(1)	(2)	(3)	(4)	(5)	(6)
All	50.78%	49.22%	56.26%	43.74%	63.11%	36.89%
Attend College 18-24	37.25%	37.70%	37.25%	37.70%	41.62%	41.41%
Attend College 18+	13.55%	12.52%	9.90%	8.01%	11.86%	9.69%
Attend Public College 18-24	45.15%	46.88%	32.23%	34.11%	36.22%	37.12%
Attend Public College 18+	11.35%	11.02%	8.55%	7.11%	10.19%	8.47%
Male	44.86%	46.06%	45.86%	46.51%	48.71%	47.92%
Non-married	21.80%	18.34%	22.62%	17.34%	22.24%	28.14%
Limitation	9.85%	10.18%	-	-	-	-
Disabled	-	-	22.49%	22.17%	-	-
Poverty Status						
< 100% Poverty Level	12.75%	14.73%	10.88%	10.77%	9.26%	8.78%
100-199% Poverty level	16.72%	18.96%	18.44%	18.79%	18.26%	16.45%
200-299% Poverty level	19.00%	19.50%	19.64%	19.90%	19.19%	18.92%
300-399% Poverty level	16.53%	16.20%	15.99%	16.33%	16.04%	16.59%
400-499% Poverty level	11.85%	10.89%	11.67%	11.72%	12.02%	12.62%
500% and over Poverty level	23.14%	19.70%	23.38%	22.50%	24.23%	26.64%
Race/Ethnicity						
White	78.46%	86.02%	57.08%	74.05%	50.24%	69.26%
Black	13.82%	7.15%	12.74%	7.95%	12.87%	8.20%
Native American	0.47%	0.45%	0.87%	0.94%	0.83%	0.93%
Asian American	1.38%	1.19%	1.90%	1.33%	2.58%	1.71%
Hispanic	5.62%	5.16%	26.98%	15.41%	32.83%	19.43%
Mixed	0.06%	0.04%	0.42%	0.32%	0.65%	0.46%
Place of Birth						
Born in Texas	60.92%	66.65%	59.83%	68.13%	58.42%	67.48%
Born in U.S. Outside Texas	32.61%	28.70%	28.40%	26.01%	26.68%	24.91%
Born Outside U.S.	6.47%	4.65%	11.77%	5.86%	14.89%	7.61%
Migration Status						
Migrated last 5 years	50.85%	46.87%	47.94%	44.42%	-	-
Migrated Within Texas last 5 years	42.19%	39.85%	39.01%	37.96%	-	-
Migrate Across Counties in Texas last 5 years	12.91%	16.55%	10.39%	16.10%	-	-
Migrated in last year	-	-	-	-	17.96%	15.94%
Migrated Within Texas in last year	-	-	-	-	15.41%	13.98%
Migrate Across Counties in Texas last year	-	-	-	-	3.61%	5.03%
Continuous Variables						
Mean Age	40.56	41.35	42.30	44.45	40.25	42.11
Mean Hours worked last year	33.37	32.05	33.48	32.56	25.36	25.68
Mean Disability Rating	-	-	-	-	0.02	0.02
Mean Tuition	259.56	391.98	477.40	722.69	740.78	1278.55
Sample Size	360,700	349,700	596,000	463,400	278,200	162,700

Table 2
Linear Probability Estimates of Determinants College Enrollment in Texas

1990 Census Sample				
	(I) Enrollment in Any College			
	Aged 18 – 24		**18 and Older**	
Variables	(1)	(2)	(3)	(4)
Tuition	-0.098 **	0.000	-0.073 ***	-0.033 **
	(0.049)	(0.047)	(0.015)	(0.015)
Distance to closest CC main campus	-	-0.008 ***	-	-0.004 ***
		(0.002)		(0.001)
	(II) Enrollment in a Public College			
	Aged 18 - 24		**18 and Older**	
Variables	(1)	(2)	(3)	(4)
Tuition	-0.052	0.034	-0.060 ***	-0.021
	(0.065)	(0.057)	(0.017)	(0.016)
Distance to closest CC main campus	-	-0.007 ***	-	-0.003 ***
		(0.003)		(0.001)
2000 Census Sample				
	(I) Enrollment in Any College			
	Aged 18 - 24		Aged 18 and Older	
Variables	(1)	(2)	(3)	(4)
Tuition	-0.122 ***	-0.054 **	-0.041 ***	-0.021 ***
	(0.028)	(0.028)	(0.007)	(0.007)
Distance to closest CC main campus	-	-0.013 ***	-	-0.004 ***
		(0.001)		(0.000)
	(II) Enrollment in a Public College			
	Aged 18 - 24		Aged 18 and Older	
Variables	(1)	(2)	(3)	(4)
Tuition	-0.110 ***	-0.048	-0.038 ***	-0.020 ***
	(0.030)	(0.030)	(0.008)	(0.008)
Distance to closest CC main campus	-	-0.012	-	-0.003 ***
		(0.001)		(0.000)
2004-2010 ACS Sample				
	(I) Enrollment in Any College			
	18 – 24		18 and Older	
Variables	(1)	(2)	(3)	(4)
Tuition	-0.040 ***	-0.005	-0.014 ***	-0.003
	(0.013)	(0.012)	(0.003)	(0.003)
Distance to closest CC main campus	-	-0.015 ***	-	-0.004 ***
		-0.002		0.000
	(II) Enrollment in a Public College			
	18 - 24		18 and Older	
Variables	(1)	(2)	(3)	(4)
Tuition	-0.033 **	-0.003	-0.013 ***	-0.003
	(0.014)	(0.013)	(0.003)	(0.003)
Distance to closest CC main campus	-	-0.013 ***	-	-0.004 ***
		(0.002)		(0.000)

Notes: Estimates also control for age, race, gender, race - gender interactions, place of birth, disability status, marital status, poverty level, migration status, weeks worked in the previous year, closest CCTD, and, for the ACS data, survey year. Standard errors are clustered at the Census tract level.

Table 3a
Estimates of the Effect of Tuition on Enrollment by Race: 1990 Census Sample

	(I) Enrollment in Any College			
Race/Ethnicity	**Aged 18 - 24**		**Aged 18 and Older**	
	(1)	**(2)**	**(3)**	**(4)**
White	-0.114 **	-0.016	-0.082 ***	-0.041 ***
	(0.050)	(0.048)	(0.015)	(0.015)
Black	-0.085	0.010	-0.043 *	-0.004
	(0.074)	(0.072)	(0.023)	(0.022)
Native American	0.140	0.248	-0.071	-0.031
	(0.191)	(0.189)	(0.050)	(0.048)
Asian American	-0.011	0.071	-0.028	0.005
	(0.085)	(0.085)	(0.037)	(0.037)
Hispanic	-0.032	0.093	-0.005	0.046 *
	(0.062)	(0.058)	(0.024)	(0.024)
Other/Mixed	0.489	0.593	0.149	0.184
	(0.409)	(0.410)	(0.187)	(0.188)
F-test	1.54	1.94 *	4.36 ***	5.01 ***
	(II) Enrollment in a Public College			
Race/Ethnicity	**Aged 18 - 24**		**Aged 18 and Older**	
	(1)	**(2)**	**(3)**	**(4)**
White	-0.061	0.024	-0.069 ***	-0.030 *
	(0.066)	(0.058)	(0.017)	(0.016)
Black	-0.063	0.020	-0.032	0.005
	(0.088)	(0.080)	(0.025)	(0.023)
Native American	0.105	0.198	-0.055	-0.017
	(0.190)	(0.184)	(0.046)	(0.044)
Asian American	0.078	0.149	0.002	0.033
	(0.107)	(0.105)	(0.040)	(0.040)
Hispanic	-0.013	0.095	0.003	0.052 **
	(0.075)	(0.066)	(0.027)	(0.026)
Other/Mixed	0.188	0.279	0.024	0.058
	(0.483)	(0.480)	(0.184)	(0.184)
F-test	0.87	1.02	3.88 ***	4.45 ***

Notes: Linear probability estimates control for tuition and its interaction with race, age, race, gender, race - gender interactions, place of birth, disability status, marital status, poverty level, migration status, weeks worked in the previous year, and in columns (2) and (4) closest CCTD. Standard errors are clustered at the census tract level.

Table 3b

Estimates of the Effect of Tuition on Enrollment by Race: 2000 Census Sample

Race/Ethnicity	(I) Enrollment in Any College			
	Aged 18 - 24		Aged 18 and Older	
	(1)	(2)	(3)	(4)
White	-0.099 ***	-0.034	-0.041 ***	-0.022 ***
	(0.031)	(0.032)	(0.008)	(0.008)
Black	-0.114 ***	-0.051	-0.040 ***	-0.023 **
	(0.039)	(0.039)	(0.011)	(0.011)
Native American	-0.210 ***	-0.146 **	-0.041 ***	-0.022
	(0.069)	(0.070)	(0.015)	(0.015)
Asian American	-0.112 ***	-0.076 **	-0.015	-0.004
	(0.037)	(0.036)	(0.015)	(0.015)
Hispanic	-0.168 ***	-0.092 ***	-0.043 ***	-0.022 **
	(0.027)	(0.027)	(0.009)	(0.009)
Other/Mixed	-0.109	-0.056	-0.082 ***	-0.066 ***
	(0.087)	(0.088)	(0.025)	(0.025)
F-test	3.55 ***	2.35 **	1.51	1.19
Race/Ethnicity	**(II) Enrollment in a Public College**			
	Aged 18 - 24		Aged 18 and Older	
	(1)	(2)	(3)	(4)
White	-0.083 **	-0.023	-0.038 ***	-0.020 **
	(0.034)	(0.034)	(0.008)	(0.008)
Black	-0.115 ***	-0.057	-0.041 ***	-0.025 **
	(0.040)	(0.040)	(0.011)	(0.011)
Native American	-0.200 ***	-0.141 **	-0.043 ***	-0.025 *
	(0.066)	(0.067)	(0.015)	(0.015)
Asian American	-0.044	-0.010	0.007	0.016
	(0.039)	(0.038)	(0.016)	(0.012)
Hispanic	-0.168 ***	-0.098 ***	-0.041 ***	-0.021 **
	(0.029)	(0.028)	(0.009)	(0.009)
Other/Mixed	-0.111	-0.062	-0.068 ***	-0.053 **
	(0.088)	(0.089)	(0.024)	(0.024)
F-test	6.29 ***	4.29 ***	2.46 **	1.98 *

Notes: Linear probability estimates control for tuition and its interaction with race, age, race, gender, race - gender interactions, place of birth, disability status, marital status, poverty level, migration status, weeks worked in the previous year, and in columns (2) and (4) closest CCTD. Standard errors are clustered at the census tract level.

Table 3c

Estimates of the Effect of Tuition on Enrollment by Race: 2004-2010 ACS Sample

Race/Ethnicity	(I) Enrollment in Any College			
	Aged 18 - 24		Aged 18 and Older	
	(1)	(2)	(3)	(4)
White	-0.038 **	-0.002	-0.015 ***	-0.004
	(0.016)	(0.016)	(0.003)	(0.003)
Black	-0.012	0.018	-0.007	-0.006
	(0.023)	(0.023)	(0.006)	(0.005)
Native American	-0.156 **	-0.116 *	-0.030 ***	-0.019 *
	(0.061)	(0.062)	(0.011)	(0.011)
Asian American	-0.059 **	-0.040	-0.024 ***	-0.019 **
	(0.027)	(0.027)	(0.008)	(0.008)
Hispanic	-0.044 ***	-0.010	-0.012 ***	-0.002
	(0.012)	(0.012)	(0.004)	(0.004)
Other/Mixed	-0.017	0.013	-0.029 *	-0.020
	(0.071)	(0.070)	(0.017)	(0.017)
F-test	1.46	1.52	1.61	1.74
Race/Ethnicity	**(II) Enrollment in a Public College**			
	Aged 18 - 24		**Aged 18 and Older**	
	(1)	**(2)**	**(3)**	**(4)**
White	-0.024 ***	0.008	-0.013 ***	-0.003
	(0.017)	(0.017)	(0.003)	(0.003)
Black	-0.020	0.006	-0.009 *	-0.001
	(0.022)	(0.022)	(0.005)	(0.005)
Native American	-0.159 ***	-0.124 **	-0.033 ***	-0.023 **
	(0.060)	(0.061)	(0.011)	(0.011)
Asian American	-0.057 *	-0.039 **	-0.023 ***	-0.017 **
	(0.031)	(0.031)	(0.009)	(0.009)
Hispanic	-0.045 ***	-0.015 *	-0.013 ***	-0.003
	(0.012)	(0.012)	(0.004)	(0.003)
Other/Mixed	0.029	0.056	-0.017	-0.009
	(0.073)	(0.072)	(0.017)	(0.017)
F-test	1.85	1.91 *	1.19	1.46

Notes: Linear probability estimates control for tuition and its interaction with race, age, race, gender, race - gender interactions, place of birth, disability status, marital status, poverty level, migration status, weeks worked in the previous year, and in columns (2) and (4) closest CCTD. Standard errors are clustered at the census tract level.

Table 4a
Estimates of the Effect of Tuition on Enrollment by Gender: 1990 Census Sample

	(I) Enrollment in Any College			
Gender	**Aged 18 - 24**		**Aged 18 and Older**	
	(1)	**(2)**	**(3)**	**(4)**
Female	-0.095 *	0.003	-0.066 ***	-0.025
	(0.051)	(0.050)	(0.015)	(0.015)
Male	-0.101 **	-0.002	-0.079 ***	-0.039 ***
	(0.051)	(0.048)	(0.015)	(0.015)
F-test	0.05	0.04	3.7 *	3.9 **
	(II) Enrollment in a Public College			
Gender	**Aged 18 - 24**		**Aged 18 and Older**	
	(1)	**(2)**	**(3)**	**(4)**
Female	-0.050	0.035	-0.050 ***	-0.011
	(0.065)	(0.057)	(0.018)	(0.017)
Male	-0.053	-0.052	-0.069 ***	-0.030 *
	(0.068)	(0.059)	(0.018)	(0.016)
F-test	0.01	0.01	7.71 ***	7.99 ***

Notes: Linear probability estimates control for tuition and its interaction with gender, age, race, gender, race - gender interactions, place of birth, disability status, marital status, poverty level, migration status, weeks worked in the previous year, and in columns (2) and (4) closest CCTD. Standard errors are clustered at the census tract level.

Table 4b

Estimates of the Effect of Tuition on Enrollment by Gender: 2000 Census Sample

Gender	**(I) Enrollment in Any College**			
	Aged 18 – 24		**Aged 18 and Older**	
	(1)	**(2)**	**(3)**	**(4)**
Female	-0.117 ***	-0.049 *	-0.041 ***	-0.022 ***
	(0.028)	(0.028)	(0.007)	(0.007)
Male	-0.126 ***	-0.060 **	-0.040 ***	-0.020 ***
	(0.028)	(0.028)	(0.008)	(0.008)
F-test	0.70	0.93	0.56	0.66
Gender	**(II) Enrollment in a Public College**			
	Aged 18 – 24		Aged 18 and Older	
	(1)	**(2)**	**(3)**	**(4)**
Female	-0.106 ***	-0.043	-0.039 ***	-0.021 ***
	(0.031)	(0.031)	(0.008)	(0.008)
Male	-0.114 ***	-0.052 *	-0.036 ***	-0.018 **
	(0.030)	(0.030)	(0.008)	(0.008)
F-test	0.48	0.66	1.75	1.92

Notes: Linear probability estimates control for tuition and its interaction with gender, age, race, gender, race - gender interactions, place of birth, disability status, marital status, poverty level, migration status, weeks worked in the previous year, and in columns (2) and (4) closest CCTD. Standard errors are clustered at the census tract level.

Table 4c

Estimates of the Effect of Tuition on Enrollment by Gender: 2004-2010 ACS Sample

Gender	(I) Enrollment in Any College			
	Aged 18 – 24		Aged 18 and Older	
	(1)	(2)	(3)	(4)
Female	-0.028 **	0.007	-0.012 ***	-0.002
	(0.013)	(0.013)	(0.003)	(0.003)
Male	-0.051 ***	-0.017	-0.016 ***	-0.005 *
	(0.009)	(0.013)	(0.003)	(0.003)
F-test	6.98 ***	6.9 ***	3.72 *	3.75 *
Gender	**(II) Enrollment in a Public College**			
	Aged 18 – 24		Aged 18 and Older	
	(1)	(2)	(3)	(4)
Female	-0.028 **	0.002	-0.012 ***	-0.003
	(0.014)	(0.014)	(0.003)	(0.003)
Male	-0.038 ***	-0.008	-0.014 ***	-0.004 **
	(0.014)	(0.014)	(0.003)	(0.003)
F-test	1.34	1.29	0.57	0.57

Notes: Linear probability estimates control for tuition and its interaction with gender, age, race, gender, race - gender interactions, place of birth, disability status, marital status, poverty level, migration status, weeks worked in the previous year, and in columns (2) and (4) closest CCTD. Standard errors are clustered at the census tract level.

Table 5a

Estimates of the Effect of Tuition on Enrollment by poverty Level: 1990 Census Sample

% of Poverty Level	(I) Enrollment in Any College			
	Aged 18 – 24		Aged 18 and Older	
	(1)	(2)	(3)	(4)
< 100%	-0.026	0.093 **	0.043	0.054 *
	(0.108)	(0.113)	(0.052)	(0.016)
100%-199%	-0.108 *	0.003	-0.069 ***	-0.022
	(0.056)	(0.051)	(0.017)	(0.016)
200%-299%	-0.145 ***	-0.042	-0.092 ***	-0.048 ***
	(0.052)	(0.049)	(0.016)	(0.015)
300%-399%	-0.084 *	0.012	-0.087 ***	-0.046 ***
	(0.051)	(0.050)	(0.015)	(0.015)
400%-499%	-0.133 **	-0.044	-0.092 ***	-0.052 ***
	(0.053)	(0.052)	(0.016)	(0.015)
500% +	-0.118 **	-0.035	-0.094 ***	-0.056 ***
	(0.051)	(0.050)	(0.015)	(0.014)
F-test	0.6712	0.76	1.82	2.46 **
% of Poverty Level	**(II) Enrollment in a Public College**			
	Aged 18 – 24		Aged 18 and Older	
	(1)	(2)	(3)	(4)
< 100%	0.252 *	0.365 ***	0.137 ***	0.187 ***
	(0.140)	(0.137)	(0.062)	(0.062)
100%-199%	-0.096	0.009	-0.060 ***	-0.013
	(0.065)	(0.058)	(0.019)	(0.018)
200%-299%	-0.162 ***	-0.065	-0.090 ***	-0.047 ***
	(0.062)	(0.056)	(0.018)	(0.016)
300%-399%	-0.097	-0.006	-0.082 ***	-0.041 ***
	(0.062)	(0.057)	(0.017)	(0.016)
400%-499%	-0.126 **	-0.042	-0.085 ***	-0.047 ***
	(0.063)	(0.059)	(0.018)	(0.017)
500% +	-0.168 ***	-0.089	-0.096 ***	-0.059 ***
	(0.061)	(0.057)	(0.017)	(0.015)
F-test	2.78 **	3.06 ***	3.82 ***	4.59 ***

Notes: Linear probability estimates control for tuition and its interaction with poverty level, age, race, gender, race - gender interactions, place of birth, disability status, marital status, poverty level, migration status, weeks worked in the previous year, and in columns (2) and (4) closest CCTD. Standard errors are clustered at the census tract level.

Table 5b

Estimates of the Effect of Tuition on Enrollment by poverty Level: 2000 Census Sample

% of Poverty Level	(I) Enrollment in Any College			
	Aged 18 – 24		Aged 18 and Older	
	(1)	(2)	(3)	(4)
< 100%	0.039	0.112 **	0.064 **	0.086 ***
	(0.050)	(0.049)	(0.025)	(0.025)
100%-199%	-0.116 ***	-0.038	-0.030 ***	-0.007
	(0.034)	(0.034)	(0.010)	(0.010)
200%-299%	-0.173 ***	-0.100 ***	-0.053 ***	-0.032 ***
	(0.025)	(0.026)	(0.007)	(0.007)
300%-399%	-0.181 ***	-0.115 ***	-0.056 ***	-0.036 ***
	(0.026)	(0.026)	(0.007)	(0.007)
400%-499%	-0.156 ***	-0.093 ***	-0.056 ***	-0.037 ***
	(0.028)	(0.028)	(0.007)	(0.007)
500% +	-0.159 ***	-0.105 ***	-0.055 ***	-0.038 ***
	(0.026)	(0.025)	(0.007)	(0.007)
F-test	7.90 ***	7.10 ***	5.90 ***	5.46 ***
% of Poverty Level	**(II) Enrollment in a Public College**			
	Aged 18 – 24		Aged 18 and Older	
	(1)	(2)	(3)	(4)
< 100%	0.082	0.150398 ***	0.075 ***	0.096 ***
	(0.054)	(0.053)	(0.026)	(0.026)
100%-199%	-0.107 ***	-0.035	-0.028 ***	-0.007
	(0.036)	(0.036)	(0.010)	(0.010)
200%-299%	-0.168 ***	-0.100 ***	-0.050 ***	-0.030 ***
	(0.026)	(0.027)	(0.007)	(0.008)
300%-399%	-0.180 ***	-0.118 ***	-0.053	-0.035 ***
	(0.027)	(0.028)	(0.007)	(0.007)
400%-499%	-0.155 ***	-0.097 ***	-0.054 ***	-0.037 ***
	(0.030)	(0.030)	(0.008)	(0.008)
500% +	-0.153 ***	-0.103 ***	-0.052 ***	-0.036 ***
	(0.026)	(0.027)	(0.007)	(0.007)
F-test	9.26 ***	8.40 ***	6.29 ***	5.72 ***

Notes: Linear probability estimates control for tuition and its interaction with poverty level, age, race, gender, race - gender interactions, place of birth, disability status, marital status, poverty level, migration status, weeks worked in the previous year, and in columns (2) and (4) closest CCTD. Standard errors are clustered at the census tract level.

Table 5c

Estimates of the Effect of Tuition on Enrollment by poverty Level: 2004-2010 ACS Sample

% of Poverty Level	(I) Enrollment in Any College			
	Aged 18 – 24		Aged 18 and Older	
	(1)	(2)	(3)	(4)
< 100%	0.045 *	0.083 ***	0.024 *	0.035 ***
	(0.027)	(0.027)	(0.013)	(0.013)
100%-199%	-0.042 ***	-0.006	-0.009 **	0.002
	(0.015)	(0.014)	(0.004)	(0.004)
200%-299%	-0.059 ***	-0.024 *	0.018 ***	-0.007 **
	(0.013)	(0.001)	(0.003)	(0.003)
300%-399%	-0.066 **	-0.032 **	-0.018 ***	-0.007 **
	(0.014)	(0.014)	(0.003)	(0.003)
400%-499%	-0.086 ***	-0.052 ***	-0.020 ***	-0.010 ***
	(0.017)	(0.017)	(0.003)	(0.003)
500% +	-0.063 ***	-0.033 **	-0.021 ***	-0.011 ***
	(0.015)	(0.014)	(0.003)	(0.003)
F-test	4.82 ***	4.99 ***	3.4 ***	3.58 ***
% of Poverty Level	**(II) Enrollment in a Public College**			
	Aged 18 – 24		Aged 18 and Older	
	(1)	(2)	(3)	(4)
< 100%	0.064 **	0.098 ***	0.032 **	0.042 ***
	(0.029)	(0.028)	(0.013)	(0.013)
100%-199%	-0.040 ***	-0.008	-0.008 **	0.002
	(0.015)	(0.015)	(0.004)	(0.004)
200%-299%	-0.055 ***	-0.023 *	-0.018 ***	-0.008 **
	(0.013)	(0.014)	(0.003)	(0.003)
300%-399%	-0.063 ***	-0.033 **	-0.019 ***	-0.010 ***
	(0.014)	(0.015)	(0.003)	(0.003)
400%-499%	-0.077 ***	-0.047 ***	-0.019 ***	-0.009 ***
	(0.017)	(0.017)	(0.003)	(0.003)
500% +	-0.062 ***	-0.035 **	-0.020 ***	-0.011 ***
	(0.015)	(0.015)	(0.003)	(0.003)
F-test	5.62 ***	5.76 ***	3.81 ***	3.86 ***

Notes: Linear probability estimates control for tuition and its interaction with poverty level, age, race, gender, race - gender interactions, place of birth, disability status, marital status, poverty level, migration status, weeks worked in the previous year, and in columns (2) and (4) closest CCTD. Standard errors are clustered at the census tract level.

Table 6
Linear Probability Estimates of Determinants College Enrollment in Texas

	1990 Census			
	(I) Enrollment in Any College			
Variables	**Aged 18 - 24**		**Aged 18 and Older**	
	(1)	(2)	(3)	(4)
High Subsidy	0.034 *	0.046 **	0.014 ***	0.021 ***
	(0.018)	(0.019)	(0.005)	(0.006)
In CCTD	-0.001	-0.039 **	0.005	-0.011 **
	(0.014)	(0.016)	(0.004)	(0.005)
Distance to closest CC main campus		-0.011 ***		-0.005 ***
		(0.003)		(0.001)
	(II) Enrollment in a Public College			
Variables	**Aged 18 - 24**		**Aged 18 and Older**	
	(1)	(2)	(3)	(4)
High Subsidy	0.050 **	0.062 **	0.016 ***	0.023 ***
	(0.025)	(0.026)	(0.006)	(0.007)
In CCTD	-0.021	-0.058 ***	0.001	-0.015 ***
	(0.018)	(0.020)	(0.005)	(0.006)
Distance to closest CC main campus		-0.011 ***		-0.005 ***
		(0.003)		(0.001)
	2000 Census			
	(I) Enrollment in Any College			
Variables	**Aged 18 - 24**		**Aged 18 and Older**	
	(1)	(2)	(3)	(4)
High Subsidy	0.049 ***	0.069 ***	0.014 ***	0.019 ***
	(0.015)	(0.006)	(0.001)	(0.003)
In CCTD	0.013	-0.034 ***	0.005 ***	-0.008 ***
	(0.011)	(0.005)	(0.001)	(0.003)
Distance to closest CC main campus		-0.015 ***		-0.004 ***
		(0.001)		(0.000)
	(II) Enrollment in a Public College			
Variables	**Aged 18 - 24**		**Aged 18 and Older**	
	(1)	(2)	(3)	(4)
High Subsidy	0.054 ***	0.073 ***	0.014 ***	0.019 ***
	(0.016)	(0.016)	(0.004)	(0.004)
In CCTD	0.003	-0.044 ***	0.003	-0.009 ***
	(0.012)	(0.012)	(0.003)	(0.003)
Distance to closest CC main campus		-0.015 ***		-0.004 ***
		(0.002)		(0.000)
	2004-2010 ACS			
	(I) Enrollment in Any College			
Variables	**Aged 18 - 24**		**Aged 18 and Older**	
	(1)	(2)	(3)	(4)
High Subsidy	0.014	0.029 **	0.006 **	0.010 ***
	(0.013)	(0.014)	(0.003)	(0.003)
In CCTD	0.019 *	-0.028 **	0.006 **	-0.009 ***
	(0.010)	(0.012)	(0.002)	(0.003)
Distance to closest CC main campus		-0.017 ***		-0.005 ***
		(0.002)		(0.001)
	(II) Enrollment in a Public College			
Variables	**Aged 18 - 24**		**Aged 18 and Older**	
	(1)	(2)	(3)	(4)
High Subsidy	0.028 **	0.042 ***	0.008 ***	0.012 ***
	(0.013)	(0.014)	(0.003)	(0.003)
In CCTD	0.002	-0.043 ***	0.003	-0.011 ***
	(0.011)	(0.013)	(0.003)	(0.003)
Distance to closest CC main campus		-0.016 ***		-0.005 ***
		(0.002)		(0.000)

Notes: Estimates also control for age, race, gender, race - gender interactions, place of birth, disability status, marital status, poverty level, migration status, weeks worked in the previous year, closest CCTD, and, for the ACS data, survey year. Standard errors are clustered at the Census tract level.

Table 7a
Estimates of the Effect of High Subsidy on Enrollment by Race: 1990 Census

Race/Ethnicity	(I) Enrollment in Any College			
	Aged 18 - 24		Aged 18 and Older	
	(1)	(2)	(3)	(4)
White	0.032 *	0.044 **	0.013 **	0.019 ***
	(0.019)	(0.020)	(0.006)	(0.006)
Black	0.043 *	0.058 ***	0.020 ***	0.028 ***
	(0.022)	(0.023)	(0.006)	(0.007)
Native American	0.002	0.015	0.014	0.021
	(0.051)	(0.051)	(0.016)	(0.016)
Asian American	0.082 **	0.095 **	0.048 **	0.055 ***
	(0.037)	(0.038)	(0.020)	(0.020)
Hispanic	0.029	0.044 *	0.019 **	0.027 ***
	(0.022)	(0.022)	(0.008)	(0.008)
Other/Mixed	xxxx	xxxx	xxxx	xxxx
	xxxx	xxxx	xxxx	xxxx
F-test	0.73	0.79	1.33	1.61
Race/Ethnicity	**(II) Enrollment in a Public College**			
	Aged 18 - 24		Aged 18 and Older	
	(1)	(2)	(3)	(4)
White	0.051 **	0.062 **	0.015 **	0.022 ***
	(0.026)	(0.027)	(0.007)	(0.007)
Black	0.036	0.051 *	0.017 ***	0.026 ***
	(0.026)	(0.027)	(0.007)	(0.007)
Native American	0.010	0.023	0.008	0.015
	(0.054)	(0.054)	(0.015)	(0.015)
Asian American	0.148 ***	0.161 ***	0.071 ***	0.079 ***
	(0.053)	(0.054)	(0.024)	(0.024)
Hispanic	0.034	0.048 *	0.018 **	0.026 ***
	(0.027)	(0.027)	(0.008)	(0.009)
Other/Mixed	xxxx	xxxx	xxxx	xxxx
	xxxx	xxxx	xxxx	xxxx
F-test	0.1661	1.53	1.91 *	2.1 *

Notes: Linear probability estimates control for in-district status and high subsidy receipt and their interaction with race, age, race, gender, race - gender interactions, place of birth, disability status, marital status, poverty level, migration status, weeks worked in the previous year, and in columns (2) and (4) closest CCTD. Standard errors are clustered at the census tract level.

Table 7b
Estimates of the Effect of High Subsidy on Enrollment by Race: 2000 Census

Race/Ethnicity	(I) Enrollment in Any College			
	Aged 18 - 24		Aged 18 and Older	
	(1)	(2)	(3)	(4)
White	0.058 ***	0.075 ***	0.016 ***	0.020 ***
	(0.017)	(0.017)	(0.004)	(0.004)
Black	0.034 *	0.054 ***	0.009 **	0.014 ***
	(0.018)	(0.018)	(0.004)	(0.004)
Native American	0.021	0.040	0.018 **	0.023 ***
	(0.038)	(0.038)	(0.008)	(0.008)
Asian American	0.073 ***	0.090 ***	0.038 ***	0.043 ***
	(0.025)	(0.025)	(0.010)	(0.010)
Hispanic	0.037 ***	0.058 ***	0.003	0.009 **
	(0.014)	(0.014)	(0.004)	(0.004)
Other/Mixed	0.057	0.073	0.046 ***	0.050 ***
	(0.049)	(0.049)	(0.015)	(0.015)
F-test	1.53	1.08	5.89 ***	5.1 ***
Race/Ethnicity	**(II) Enrollment in a Public College**			
	Aged 18 - 24		**Aged 18 and Older**	
	(1)	**(2)**	**(3)**	**(4)**
White	0.063 ***	0.079 ***	0.017 ***	0.021 ***
	(0.018)	(0.018)	(0.004)	(0.004)
Black	0.035 *	0.054 ***	0.009 **	0.014 ***
	(0.018)	(0.018)	(0.004)	(0.004)
Native American	0.031	0.049	0.017 **	0.022 ***
	(0.038)	(0.038)	(0.008)	(0.008)
Asian American	0.090 ***	0.107 ***	0.041 ***	0.046 ***
	(0.028)	(0.028)	(0.011)	(0.011)
Hispanic	0.038 **	0.059 ***	0.004	0.009 **
	(0.015)	(0.015)	(0.004)	(0.004)
Other/Mixed	0.063	0.079	0.047 ***	0.052 ***
	(0.050)	(0.050)	(0.014)	(0.014)
F-test	1.98 *	1.53 **	7.04 ***	6.07 ***

Notes: Linear probability estimates control for in-district status and high subsidy receipt and their interaction with race, age, race, gender, race - gender interactions, place of birth, disability status, marital status, poverty level, migration status, weeks worked in the previous year, and in columns (2) and (4) closest CCTD. Standard errors are clustered at the census tract level.

Table 7c

Estimates of the Effect of High Subsidy on Enrollment by Race: 2004-2010 ACS

Race/Ethnicity	(I) Enrollment in Any College			
	Aged 18 - 24		Aged 18 and Older	
	(1)	(2)	(3)	(4)
White	0.030 ***	0.045 ***	0.009 ***	0.013 ***
	(0.009)	(0.009)	(0.002)	(0.002)
Black	0.010	0.026 *	0.001	0.007 *
	(0.015)	(0.015)	(0.004)	(0.004)
Native American	-0.005	0.008	0.008	0.013
	(0.053)	(0.053)	(0.013)	(0.013)
Asian American	0.030	0.043 *	0.012	0.016 *
	(0.025)	(0.025)	(0.008)	(0.008)
Hispanic	-0.011	0.004	0.000	0.005
	(0.010)	(0.010)	(0.003)	(0.003)
Other/Mixed	-0.006	0.008	-0.012	-0.007
	(0.055)	(0.055)	(0.017)	(0.017)
F-test	3.38 ***	3.2 ***	2.58 **	2.42 **
Race/Ethnicity	**(II) Enrollment in a Public College**			
	Aged 18 - 24		**Aged 18 and Older**	
	(1)	**(2)**	**(3)**	**(4)**
White	0.045 ***	0.058 ***	0.011 ***	0.015 ***
	(0.009)	(0.009)	(0.002)	(0.002)
Black	0.019	0.033 **	0.002	0.007 *
	(0.014)	(0.015)	(0.004)	(0.004)
Native American	0.019	0.031	0.013	0.017
	(0.052)	(0.052)	(0.012)	(0.012)
Asian American	0.075 ***	0.086 ***	0.021 **	0.025 ***
	(0.027)	(0.027)	(0.008)	(0.008)
Hispanic	-0.003	0.012	0.001	0.006 **
	(0.010)	(0.010)	(0.003)	(0.003)
Other/Mixed	0.054	0.068	0.002	0.006
	(0.054)	(0.054)	(0.016)	(0.016)
F-test	5.23 ***	4.97 ***	3.74 ***	3.51 ***

Notes: Linear probability estimates control for in-district status and high subsidy receipt and their interaction with race, age, race, gender, race - gender interactions, place of birth, disability status, marital status, poverty level, migration status, weeks worked in the previous year, and in columns (2) and (4) closest CCTD. Standard errors are clustered at the census tract level.

Table 8a
Estimates of the Effect of High Subsidy on Enrollment by Gender: 1990 Census

Gender	**(I) Enrollment in Any College**			
	Aged 18 - 24		Aged 18 and Older	
	(1)	(2)	(3)	(4)
Female	0.040 **	0.052 ***	0.015 ***	0.022 ***
	(0.019)	(0.020)	(0.005)	(0.006)
Male	0.029	0.041 **	0.013 **	0.020 ***
	(0.019)	(0.020)	(0.005)	(0.006)
F-test	1.700	1.700	0.670	0.610
Gender	**(II) Enrollment in a Public College**			
	Aged 18 – 24		Aged 18 and Older	
	(1)	(2)	(3)	(4)
Female	0.048 **	0.060 **	0.016 **	0.023 ***
	(0.025)	(0.026)	(0.007)	(0.007)
Male	0.052 **	0.064 **	0.016 **	0.024 ***
	(0.026)	0.026	(0.007)	(0.007)
F-test	0.130	0.130	0.010	0.020

Notes: Linear probability estimates control for in-district status and high subsidy receipt and their interaction with gender, age, race, gender, race - gender interactions, place of birth, disability status, marital status, poverty level, migration status, weeks worked in the previous year, and in columns (2) and (4) closest CCTD. Standard errors are clustered at the census tract level.

Table 8b
Estimates of the Effect of High Subsidy on Enrollment by Gender: 2000 Census

Gender	**(I) Enrollment in Any College**			
	Aged 18 - 24		Aged 18 and Older	
	(1)	(2)	(3)	(4)
Female	0.050 ***	0.070 ***	0.013 ***	0.018 ***
	(0.015)	(0.015)	(0.003)	(0.003)
Male	0.048 ***	0.068 ***	0.015 ***	0.020 ***
	(0.015)	(0.015)	(0.004)	(0.003)
F-test	0.120	0.130	1.310	1.220
Gender	**(II) Enrollment in a Public College**			
	Aged 18 – 24		Aged 18 and Older	
	(1)	(2)	(3)	(4)
Female	0.054 ***	0.074 ***	0.013 ***	0.018 ***
	(0.016)	(0.016)	(0.004)	(0.004)
Male	0.053 ***	0.072 ***	0.016 ***	0.021 ***
	(0.016)	(0.016)	(0.004)	(0.004)
F-test	0.060	0.070	3.840 **	3.680 *

Notes: Linear probability estimates control for in-district status and high subsidy receipt and their interaction with gender, age, race, gender, race - gender interactions, place of birth, disability status, marital status, poverty level, migration status, weeks worked in the previous year, and in columns (2) and (4) closest CCTD. Standard errors are clustered at the census tract level.

Table 8c
Estimates of the Effect of High Subsidy on Enrollment by Gender: 2004-2011 ACS

Gender	**(I) Enrollment in Any College**			
	Aged 18 - 24		Aged 18 and Older	
	(1)	(2)	(3)	(4)
Female	0.012	0.027 ***	0.005 **	0.010 ***
	(0.009)	(0.009)	(0.002)	(0.002)
Male	0.016 *	0.031 ***	0.006 ***	0.011 ***
	(0.009)	(0.009)	(0.002)	(0.002)
F-test	0.260	0.290	0.260	0.290
Gender	**(II) Enrollment in a Public College**			
	Aged 18 – 24		Aged 18 and Older	
	(1)	(2)	(3)	(4)
Female	0.027 ***	0.041 ***	0.007 ***	0.012 ***
	(0.009)	(0.009)	(0.002)	(0.002)
Male	0.029 ***	0.043 ***	0.009 ***	0.013 ***
	(0.009)	(0.009)	(0.002)	(0.002)
F-test	0.090	0.100	0.550	0.590

Notes: Linear probability estimates control for in-district status and high subsidy receipt and their interaction with gender, age, race, gender, race - gender interactions, place of birth, disability status, marital status, poverty level, migration status, weeks worked in the previous year, and in columns (2) and (4) closest CCTD. Standard errors are clustered at the census tract level.

Table 9a
Estimates of the Effect of High Subsidy on Enrollment by Poverty Level: 1990 Census

% of Poverty Level	(I) Enrollment in Any College			
	Aged 18 – 24		Aged 18 and Older	
	(1)	(2)	(3)	(4)
< 100%	0.018	0.030	0.024	0.032 *
	(0.034)	(0.034)	(0.017)	(0.018)
100%-199%	0.049 **	0.060 ***	0.021 ***	0.028 ***
	(0.020)	(0.020)	(0.006)	(0.006)
200%-299%	0.035 *	0.047 **	0.010 *	0.017 ***
	(0.020)	(0.020)	(0.005)	(0.006)
300%-399%	0.049 **	0.062 ***	0.014 ***	0.021 ***
	(0.020)	(0.021)	(0.005)	(0.006)
400%-499%	0.019	0.031	0.008	0.015 ***
	(0.022)	(0.023)	(0.006)	(0.006)
500% +	0.030	0.043 **	0.008	0.015 ***
	(0.021)	(0.022)	(0.005)	(0.006)
F-test	1.26	1.21	2.76 **	2.71 **
% of Poverty Level	**(II) Enrollment in a Public College**			
	Aged 18 - 24		Aged 18 and Older	
	(1)	(2)	(3)	(4)
< 100%	0.101 **	0.114 **	0.056 **	0.063 ***
	(0.049)	(0.049)	(0.022)	(0.022)
100%-199%	0.043 *	0.055 **	0.018 ***	0.025 ***
	(0.023)	(0.024)	(0.006)	(0.007)
200%-299%	0.027	0.040 *	0.008	0.015 **
	(0.023)	(0.024)	(0.006)	(0.006)
300%-399%	0.043 *	0.056 **	0.012 *	0.019 ***
	(0.024)	(0.025)	(0.006)	(0.007)
400%-499%	0.018	0.031	0.005	0.012 *
	(0.026)	(0.027)	(0.006)	(0.007)
500% +	0.028	0.041	0.005	0.013 **
	(0.025)	(0.026)	(0.006)	(0.006)
F-test	1.22	1.17	3.59 ***	3.55 ***

Notes: Linear probability estimates control for in-district status and high subsidy receipt and their interaction with poverty level, age, race, gender, race - gender interactions, place of birth, disability status, marital status, poverty level, migration status, weeks worked in the previous year, and in columns (2) and (4) closest CCTD. Standard errors are clustered at the census tract level.

Table 9b
Estimates of the Effect of High Subsidy on Enrollment by Poverty Level: 2000 Census

% of Poverty Level	(I) Enrollment in Any College			
	Aged 18 – 24		Aged 18 and Older	
	(1)	(2)	(3)	(4)
< 100%	0.084 ***	0.105 ***	0.024 **	0.029 ***
	(0.024)	(0.024)	(0.010)	(0.010)
100%-199%	0.057 ***	0.077 ***	0.015 ***	0.020 ***
	(0.015)	(0.015)	(0.004)	(0.004)
200%-299%	0.039 ***	0.059 ***	0.011 ***	0.017 ***
	(0.015)	(0.014)	(0.003)	(0.003)
300%-399%	0.039 **	0.058 ***	0.013 ***	0.018 ***
	(0.016)	(0.016)	(0.004)	(0.003)
400%-499%	0.032 **	0.050 ***	0.012 ***	0.017 ***
	(0.017)	(0.017)	(0.004)	(0.004)
500% +	0.021	0.039 **	0.010 ***	0.015 ***
	(0.016)	(0.016)	(0.003)	(0.003)
F-test	2.30 **	2.62 **	0.91	1.06
% of Poverty Level	**(II) Enrollment in a Public College**			
	Aged 18 - 24		Aged 18 and Older	
	(1)	(2)	(3)	(4)
< 100%	0.121 ***	0.142 ***	0.036 ***	0.041 ***
	(0.026)	(0.026)	(0.010)	(0.010)
100%-199%	0.060 ***	0.080 ***	0.015 ***	0.020 ***
	(0.016)	(0.016)	(0.004)	(0.004)
200%-299%	0.039 **	0.058 ***	0.012 ***	0.017 ***
	(0.016)	(0.015)	(0.003)	(0.003)
300%-399%	0.033 *	0.052 ***	0.012 ***	0.017 ***
	(0.017)	(0.016)	(0.004)	(0.003)
400%-499%	0.019	0.036 **	0.010 ***	0.015 ***
	(0.018)	(0.018)	(0.004)	(0.004)
500% +	0.009	0.026	0.008 **	0.013 ***
	(0.017)	(0.016)	(0.003)	(0.003)
F-test	6.00 ***	6.53 ***	2.34 **	2.59 **

Notes: Linear probability estimates control for in-district status and high subsidy receipt and their interaction with poverty level, age, race, gender, race - gender interactions, place of birth, disability status, marital status, poverty level, migration status, weeks worked in the previous year, and in columns (2) and (4) closest CCTD. Standard errors are clustered at the census tract level.

Table 9c
Estimates of the Effect of High Subsidy on Enrollment by Poverty Level: 2004-2011 ACS

% of Poverty Level	(I) Enrollment in Any College			
	Aged 18 – 24		Aged 18 and Older	
	(1)	(2)	(3)	(4)
< 100%	0.053 **	0.068 ***	0.023 **	0.027 ***
	(0.023)	(0.024)	(0.010)	(0.010)
100%-199%	-0.004	0.011	0.002	0.007 *
	(0.014)	(0.015)	(0.004)	(0.004)
200%-299%	-0.016	-0.001	-0.002	0.003
	(0.014)	(0.015)	(0.003)	(0.004)
300%-399%	0.013	0.016 *	0.005	0.010 ***
	(0.016)	(0.013)	(0.003)	(0.004)
400%-499%	0.022	0.037 *	0.010 ***	0.015 ***
	(0.019)	(0.019)	(0.004)	(0.004)
500% +	0.029 *	0.045 ***	0.006 **	0.011 ***
	(0.016)	(0.016)	(0.003)	(0.003)
F-test	3.99 ***	3.99 ***	3.06 ***	3.01 **
% of Poverty Level	**(II) Enrollment in a Public College**			
	Aged 18 - 24		**Aged 18 and Older**	
	(1)	(2)	(3)	(4)
< 100%	0.092 ***	0.107 ***	0.036 ***	0.040 ***
	(0.025)	(0.025)	(0.011)	(0.011)
100%-199%	0.012	0.027 *	0.007 *	0.011 ***
	(0.014)	(0.015)	(0.004)	(0.004)
200%-299%	-0.008	0.007	-0.002	0.003
	(0.015)	(0.016)	(0.003)	(0.004)
300%-399%	0.015	0.030 *	0.004	0.009 **
	(0.016)	(0.017)	(0.003)	(0.003)
400%-499%	0.029	0.044 **	0.012 ***	0.016 ***
	(0.019)	(0.019)	(0.004)	(0.004)
500% +	0.034 **	0.049 ***	0.006 **	0.010 ***
	(0.016)	(0.017)	(0.003)	(0.003)
F-test	4.89 ***	4.91 ***	4.56 ***	4.54 ***

Notes: Linear probability estimates control for in-district status and high subsidy receipt and their interaction with poverty level, age, race, gender, race - gender interactions, place of birth, disability status, marital status, poverty level, migration status, weeks worked in the previous year, and in columns (2) and (4) closest CCTD. Standard errors are clustered at the census tract level.

Appendix Figure: School District Boundaries that Overlap College Taxing Districts