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The Effects of Higher Education Policy on the Location Decision of Individuals: Evidence from Florida's Bright Futures Scholarship Program

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The Effects of Higher Education Policy on the Location Decision of Individuals: Evidence from Florida's Bright Futures Scholarship Program

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Abstract:
Over the past two decades, numerous states have adopted merit-based aid programs to subsidize higher education for in-state students. One of the main objectives of these programs is to increase the stock of educated labor in the state by retaining those whose education is subsidized. This study provides evidence on the extent to which such a program in Florida has affected the location decision of college-educated Florida natives. The analysis utilizes a difference-in-difference approach and data from the Census and American Community Survey (ACS). The results indicate those eligible for the program are significantly more likely to locate in Florida after completing their education than those who were not eligible. These results are robust to a number of alternative specifications, including a comparison with neighboring states.

Keywords: Higher Education; Geographic Mobility; Subsidization

JEL Codes: I2; J61; R23

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1 Introduction

Beginning with Arkansas in 1991, several states have decided to supplement existing subsidies for higher education by adopting merit-based aid programs. These programs, which now exist in at least 13 states, cover at least half - and in many cases, nearly all - of the costs of tuition at in-state public institutions for the students who become eligible based on academic merit. In most cases, these programs have fairly lenient requirements for academic merit, meaning a large proportion of high school graduates may qualify.

These programs are popular with legislators, as well as voters, who propose several positive effects. One such effect is improved access for students who may otherwise be unable to afford college, or are unwilling to incur the debt necessary to attend. A second common justification is the idea of keeping the most talented students in state. By subsidizing the out-of-pocket costs to essentially zero, the hope is that this will induce talented students to remain within their home state for college, and in this way the state may retain and benefit from its most productive students for years to come. Before measuring both the private and social returns that might arise from a policy increasing the attainment or altering the college location choice of individuals, a more basic issue must be addressed. That question is: does the fact that an individual attends college in a state, particularly their home state, make it more likely that the individual will remain in that state after completing his or her education?

The issue of migration of highly educated individuals is important for assessing the efficiency of state higher education policy. The appropriate policy for a state depends fundamentally on the likelihood of retaining subsidized students, as well as the magnitude of social returns to higher education. Using the large merit-based aid programs as an exogenous

increase in the probability of staying in state for college, this paper estimates the effect of college location on the migration probability of individuals.

In particular, this paper focuses on the effects of Florida's Bright Futures Scholarship Program, which began in 1997. The timing of this program's initiation is ideal for the analysis being performed because of the availability of the annual American Community Survey (ACS) beginning with the year 2000. The yearly data provided by this source allows for better identification than waiting for changes to appear in decennial Census periods.

The next section of the paper reviews the related economic literature. This is followed by background information regarding the history of state merit-based aid programs, with a focus on Florida. Section four provides a brief discussion of the theoretical ideas being tested. Section five presents the data sources and some descriptive statistics, as well as outlining the estimation strategy. The results and robustness checks are presented in section six. A final section offers concluding remarks.

2 Literature Review

The first impact to expect from a reduction in the private cost of higher education to an individual is on the decision of whether or not to attend. The obvious problem faced by the researcher is that the cost to an individual is most likely correlated with unobservable characteristics that are also correlated with the schooling outcomes of the individual. For example, students who typically receive large scholarships often do so because they have performed well and revealed themselves to be high ability. These individuals would perhaps have continued education regardless of whether or not they had received aid. Some researchers

have utilized unique settings to come up with well-identified measures of the impact of costs on the decision of whether or not to attend.

By studying the introduction and proliferation of the federal Pell Grant on schooling decisions, both Hansen (1983) and Kane (1995) find that the program had little to no effect on the decision to attend college. More recent work by Seftor and Turner (2002) critically examines how earlier analyses were performed. By broadening the age range of individuals being studied, they find a positive effect of the Pell program on the likelihood of attending college. This study indicates that subsidies can impact the education decision at various points in the lifecycle. Dynarski (2003) looks at the response in enrollment rates for a group of individuals affected by a policy that eliminated rather than provided aid. This study shows that the elimination of the Social Security benefit program, which subsidized college expenses for children whose parents were deceased or disabled, reduced the likelihood of attending college.

The majority of recent research on this topic has come from the study of state merit-based aid programs. Dynarski (2000) examined Georgia's HOPE scholarship program and found a 7 to 8 percentage point increase in enrollment at Georgia institutions due to HOPE. Cornwell et al. (2006) also study the Georgia program, and find a more modest, yet still substantial increase in enrollment. The finding here is similar to that of Kane (2003), who was able to make use of individual level data and a regression discontinuity design to determine the enrollment response of the introduction of an income based grant program in California. A particularly relevant conclusion from the study by Cornwell et al. is that the increase in enrollment is due mostly to an increased likelihood of those who would have attended college out of state staying in state to receive their education. There appears to be a much less substantial impact on the decision of whether or not to attend.

Considerably less attention has been paid in the literature to the relationship between college costs and persistence to degree. Angrist (1993) performed one of the first studies in this area. The results of the analysis indicate that the presence of the GI bill and its educational subsidies increased the level of schooling completed by veterans by about 1.4 years. Bound and Turner (2002) perform a similar analysis using census data and find that the military benefits indeed increase the level of schooling completed.

Researchers interested in the impact of costs on completion naturally have a tendency to analyze the same programs and policies as those looking at the attendance decision. Bettinger (2004) examines the impact of the Pell grant on the persistence rate of college entrants. Here the author makes use of a unique student level data set from public universities in Ohio. The study shows that those who received the Pell Grant and entered college had a lower dropout rate than those who nearly qualified for Pell and still enrolled in college.

Dynarski (2008) uses census micro data to compare changes in the proportion of college-educated workers across cohorts within states that begin tuition subsidy (merit-based aid) programs. The author finds the subsidy programs increase the proportion of a cohort that has a college degree by about 3 percentage points. Furthermore, the author is able to decompose the results and show that the increase in share with a college degree is larger for women than for men, and particularly large for minority women.

The economic literature indicates that subsidizing college costs increases both the likelihood of enrollment and the persistence of individuals towards a degree once they have enrolled. Also, research indicates that state-specific programs may have more of an impact on where individuals are attending college as opposed to whether they attend college. The next

question from the perspective of a state deciding on the proper level of aid might be; what are the benefits of increasing the level of educational attainment?

The first place to look is in the private returns to individuals from receiving additional education. This is the interest of careful studies by Angrist (1993) and Angrist and Krueger (1991), among others. The interest here lies mainly in how much an individual's earnings increase when he or she receives an additional year of education. This, in and of itself, does not justify government intervention into the higher education market. Individuals should be able to calculate their stream of future earnings and borrow to attend higher education if the returns are large enough to justify doing so. If, however, some individuals are credit constrained and unable to borrow, then the private returns alone may warrant some level of subsidization.

Researchers have also tried to obtain measures of the social returns that might come from having a greater proportion of the population receiving higher education. There are several different ways in which we can imagine having a better-educated workforce may lead to positive externalities. One idea commonly put forth is that of spillovers. It may be that the more educated individuals an area has, the greater the opportunity to share knowledge and skills. The more educated an individual worker is, the more productive the workers around this individual will be. Moretti (2004) explored this idea and found that individuals of all education levels have higher wages in cities that have a higher percentage of college-educated workers. Other researchers have found an increase in civic participation (for example Dee (2004)) or a decrease in crime rates (for example Lochner and Moretti (2004)) resulting from more education. Glaeser et al. (1995) find that a greater proportion of educated workers in a city translates to higher economic growth.

The last question that needs to be addressed to fully assess the implications of higher education subsidy programs is that of the mobility of those who the state is paying to educate. This is a major concern based on the results of Bound and Holzer (2000), who find that those with more education tend to be more mobile than their less educated counterparts. The first attempt at examining the specific interplay between flows of college graduates and the stock of graduates in a state was done by Bound et al. (2004). This study examines how a shock in the number of graduates in a state affects the proportion of the population that is college-educated after a certain time period. The authors find only a modest link between flows and stocks of college-educated workers in a state.

Groen (2004) attempts to move the analysis from the state to the individual level and ask how the location of the college an individual attends will affect his or her mobility after graduation. The research shows only a small impact of college attendance in a state on the decision to locate in that state. However, this may be due to the lack of an appropriate sample. The data used for the analysis was the College and Beyond dataset, which is a longitudinal survey of students from 30 highly selective universities. Because of this, it is difficult to say that the results of this analysis accurately identify the impact of where the average individual attends college on where the individual eventually settles.

The research to this point has shown that state subsidy programs tend to increase the likelihood of attending college, as well as the likelihood of attending an in-state college given the decision to attend. Also, there has been some evidence of social or public returns to the overall level of education in a city or state. The link between these programs and the likelihood of retaining those being subsidized remains to be shown.

3 Background

The specific policy instrument being examined in this research is the state merit-based aid programs that have become prevalent over the past two decades. Because these programs are generally implemented for political reasons and apply to large numbers of students, they provide a good means to test a variety of questions related to the subsidization of higher education. The previous section gives an idea of the types of relationships being examined. This section provides some background information regarding these programs and some specific information for Florida, the focus of this analysis.

In 1991, Arkansas became the first state to enact legislation on a broad educational aid program for in-state high-school students who met a basic level of merit. The program went into effect for the class graduating high school in 1991. Georgia became the next state to implement merit-based aid in 1993 with the HOPE Scholarship Program. This program, which is funded by state lottery revenues, provides full subsidization of tuition and fees at Georgia public institutions of higher education.

Since this time, Mississippi (1996), Florida (1997), New Mexico (1997), Louisiana (1998), South Carolina (1998), Kentucky (1999), Nevada (2000), Michigan (2000), Maryland (2002), and West Virginia (2002) have all adopted similar merit-based aid programs for students graduating high school in state. In 2003, Tennessee adopted a program that allowed students to receive tuition subsidies in Tennessee or in certain neighboring states.

The Florida Legislature enacted the Bright Futures Scholarship Program in 1997. Like the Georgia HOPE Program before it, the program in Florida is funded by state lottery revenue. There are three categories of awards under this program. The Florida Academic Scholars award is the most prestigious and requires a 3.5 weighted GPA and either an SAT score of 1270 or

higher or an ACT score of at least 28. Students in this category must also complete 75 hours of community service. The students qualifying for this award receive full subsidization of tuition and fees at public institutions in Florida, or a stipend equal to this amount if they choose to attend a private institution in state.

The next award, the Florida Medallion Scholar[1], requires a 3.0 GPA and scores of at least 970 or 20 on the SAT and ACT, respectively. Students who earn this award may choose between a full tuition subsidy at a public community college, and 75% subsidization at a public 4-year institution. They may also apply this same amount to a Florida private institution. The final group, the Florida Gold Seal Vocational Scholars, have various levels of awards as well as varying requirements based on the type of vocational school being attended.

Table 1 shows the percentages of high school graduates in Florida who qualify for at least one of the types of awards discussed above. The table shows the period from the inception of the program through the end of the period being analyzed in this study, as will be explained in subsequent sections. The figures indicate that roughly one third of high school graduates are qualifying for these merit-based awards, and around one fourth are putting the awards to use.

Table 2 provides information on the disbursement of awards at the different types of institutions where they may be applied[2]. As we might expect, the large majority of the awards are being applied to 4-year colleges and universities, particularly public state universities. As we move forwards with the analysis, this will be important as we attempt to distinguish the magnitude of effects of the policy on groups with various levels of educational attainment. We see that after the first year, the awards have been increasingly used at 4-year institutions rather than community colleges.

[1] Prior to 2003, this award was referred to as Florida Merit Scholar.
[2] Note that vocational school awards are omitted from the table. These awards account for less than one half of one percent of total disbursements each year.

4 Conceptual Foundations

Rather than present a formal theoretical model, this section is intended to provide the conceptual basis to preface the empirical estimation being proposed. The basic question being tested is whether exposure to a state merit-based aid program significantly impacts the location decision of an individual after his or her education has been completed.

While it is often assumed that labor is perfectly mobile and can move to areas with higher wages, lower rents, or better amenities, there are numerous factors that may deter an individual from simply moving to the area where they can make the highest real wages. One factor that readily comes to mind is the idea of a social network. Individuals build a network of friends and family who live nearby and who impact the utility of the individual in a positive way. When deciding whether or not to relocate, an individual almost certainly must factor the disutility or costs involved in living farther from his or her social network, or in building a new social network in the new location. An individual's immediate family may also directly affect the decision to locate, as families with two labor force participants must simultaneously choose where to work. Sjaastad (1962) was among the first to detail both the monetary and nonmonetary "psychic" costs of migration.

Another issue that may be involved in the location decision is the relative risk aversion of the individual. A risk-averse person may choose to locate based on familiarity due to the disutility resulting from choosing to live in an unknown region. The less knowledge an individual has regarding a particular location, the more risk there is involved in moving there and the lower the utility of that individual. Heitmueller (2005), for example, presents a model in which risk-averse individuals engage in less migration.

The reasons mentioned above do not necessarily justify the notion that keeping an individual in state for college will increase the likelihood of that individual permanently locating in state after graduation. Students who choose to remain in state for college to be close to their families are more likely to also remain in state after graduation. In this case, the educational subsidy aimed at keeping the student in state has little to no impact on the location decision. However, it may also be the case that a student increases his or her social network while in college, and this does impact the student's location decision after education has been completed.

Perhaps the more relevant issue for the analysis presented here is the notion of an occupational network that may develop as students proceed through their higher education careers. This network can include contacts made by forming relationships with professors, peers, or professionals by way of internship or work-study programs[3]. It may also be that the individual may benefit from job placement services or academic counseling programs, which naturally have a tendency to interact most with businesses and organizations in the local area.

5 Data

The data for this analysis come from the 1% sample of the 2000 census, as well as from the American Community Survey (ACS) from 2000 to 2006[4]. The 1% sample is chosen for the year 2000 because of its similarities in size and nature to the ACS samples from subsequent years. In each year, the total number of individuals included in the ACS is over 1 million. In 2005 and 2006, the samples contain close to 3 million individuals. The large sample size is necessary here due to the restrictive nature of the sample, as discussed below.

[3] See Holzer (1987) and Marmaros and Sacerdote (2002) for further discussion and examples of such networks.
[4] Data were obtained from the IPUMS project at the University of Minnesota Population Center, http://usa.ipums.org/usa/.

This study is based on a sample of all 23-27 year old individuals from each of the surveys mentioned above who were born in the state of Florida. That is to say, the sample is constructed by retaining all individuals reporting ages between 23 and 27 and a state of birth of Florida, and dropping all other observations. This results in a combined sample of 20,976 observations. Of these, 4,698 individuals report being in school at the time of the sample. These individuals are dropped from the analysis as their location is largely driven by school choice, and the focus here is on post-education location decisions. Also, individuals that have had military service or are currently in the military often have different factors involved in location decision. Dropping those with current or past military service reduces the sample by 781 observations. In the end, the primary sample has 15,497 observations.

The age of 23 is chosen as the lower cutoff so that many of the individuals will have completed their education. The age of 27 is chosen as the upper cutoff in an attempt to restrict the sample to individuals in a similar position in their lifecycle, and to allow for approximately equal numbers of age cohorts for treatment and comparison groups.

As well as state of birth, data were collected on state of current residence, level of education completed, and demographic characteristics.

5.1 Assignment to Treatment

The basic strategy being utilized for this study is a treatment-control design[5]. As such, before discussing the equation to be estimated and the variables contained within, we must first set out how the treatment group will be constructed. The treatment group in this analysis is made up of individuals who are age 18 in the year 1997 or later. This is intended to indicate that these

[5] Meyer (1995) and Rosenzweig and Wolpin (2000) provide overviews of this research design and survey the numerous applications in economic research.

individuals graduated from high school in Florida in a year when they would have been exposed to the Bright Futures Scholarship Program. The control group is then made up of individuals who were age 18 in 1996 or earlier.

The annual basis of ACS data, along with the fact that there are a range of ages being included in the study, means the treatment variable will be switched on in different years for different cohorts. For example, those individuals who are age 24 in the 2000 Census as well as in the 2001 and 2002 ACS samples will be in the control group, because they would have been 18 in 1994, 1995, and 1996 respectively. Those who are age 24 in the 2003 ACS sample and beyond would have been 18 in 1997 or later and thus become part of the treatment group. The fact that this treatment is turned on in different years for different cohorts is important in that it allows for the inclusion of age and year fixed-effects in the estimation[6]. Table 3 provides an illustration of the process of assigning age-survey cohorts to treatment.

5.2 Descriptive Statistics

Table 4 provides descriptive statistics for the treatment and control groups constructed as described above. The sample sizes for the two groups are nearly identical, and the majority of the variables are similar across the two groups. The definition of the treatment variable as well as the timing of the program leads to the fact that the average age is higher for the control group. Perhaps the most noticeable difference among the explanatory variables is that the treatment group has a higher percentage of Hispanic individuals than the control group.

The college category in Table 4 includes all individuals who continued formal schooling after high school. This includes those with some college experience, and those with associate's,

[6] In reported regressions, age is included in the matrix of demographic characteristics, while survey year is controlled for with fixed effects. The year fixed effects control for the fact that individuals of different ages in a given sample year may have their location decision affected by unobserved common factors.

bachelor's, or advanced degrees. There is actually a slight *decrease* in the percentage of individuals that go on to continue education in the treatment group. This difference may be due in part to the older average age of the control group.

Members of the treatment group are more likely to reside in Florida at the time they are surveyed than members of the control group. Determining the extent to which this is due to the subsidization program rather than other differences between the two groups is the goal of the empirical analyses of subsequent sections.

Table 5 provides more detail as to the educational attainment levels achieved by those in the treatment and control groups. This is of particular importance in this analysis because we would expect that a program geared at those attending postsecondary institutions would have a differential impact on those with varying levels of education. Table 5 shows that the treatment group has a slightly higher percentage with bachelor's and associate's degrees, and a slight decrease in the proportion that have some college experience but no degree. This is consistent with results such as those in Dynarski (2008) showing an increase in persistence to degree with higher levels of subsidization.

Table 6 provides a more detailed examination of residency of Florida natives based on their assigned group and level of education. Two clear contrasts are apparent in Table 6. First, the treatment group is less mobile than the control group for all levels of education. This is consistent with the younger average age of the treatment group. Greenwood (1997) discusses the relationship between propensity to migrate and various characteristics, including age and level of education.

The second observation is that the difference in mobility between the treatment and control groups is greater for those with higher levels of education. Specifically, the decrease in

mobility between treatment and control groups is almost 4 percentage points larger for those who continue their education beyond high school than for those who do not. This is consistent with the idea that those who would be affected most by exposure to the Bright Futures Scholarship Program are those who obtain some level of college education.

5.3 Estimation Strategy

The basic form of the equation to be estimated is:

$$InState_{iat} = \beta_0 + \beta_1 Treat_{iat} + \delta Education_{iat} + \theta(Education_{iat} * Treat_{iat}) + X_{iat}\gamma + \lambda_t + \varepsilon_{iat}$$

The dependent variable, *InState*, in the equation above indicates whether or not the individual resides in Florida at the time they are surveyed. That is, it will have a value equal to one if individual i, age a, born in Florida, lives in Florida when surveyed in year t, and a value equal to zero otherwise. The binary nature of the dependent variable will lead to estimation using the probit model.

The variable *Treat* is the key variable in the estimation. The variable is equal to one if the individual is 18 in a year when the Bright Futures Scholarship Program was in operation. There are two issues to note at this point. First, because Census data is being employed, there is no way of knowing where the individuals in the sample attended (and more importantly) graduated from high school. Essentially, individuals are assumed to graduate high school in their state of birth. On the plus side, the survey will not have the problem of endogenous response of individuals who move during high school to take advantage of the scholarship program, as we only include those born in Florida. Additionally, the individuals who are born in Florida and

subsequently graduate high school in a different state are still assigned to the treatment group, which will bias the results towards finding no effect of the treatment. Thus any significant results that remain may in fact understate the actual impact of treatment.

The second issue is that we assign individuals as graduating high school when they are age 18. There is some measurement error introduced in this manner, though this is likely of a smaller magnitude than the previous problem.

The other independent variables in the estimation are level of education obtained and a vector of demographic characteristics, X. This will include variables for gender, race, and age. The Census and ACS data contain numerous other variables providing valuable information on included individuals. However, these other variables are measured contemporaneously with the final location decision, and as such, would be endogenous in this specification. For example, the income earned by an individual may affect their mobility. However, an individual's income is also clearly affected by their location. Consequently, the demographic characteristics included are limited to those that can be considered to be determined before the location decision occurs.

For the first specification, the education variable will be a simple distinction between those who went on to some form of postsecondary education and those that did not. This will later be expanded to a set of dummy variables, such as *Bachelor's*, which will be equal to one if the highest level of education obtained by that individual is a Bachelor's degree, and equal to zero otherwise.

The coefficients that will be of most interest will be those on the interaction terms between the educational attainment and treatment variables. These interaction terms will produce difference-in-difference estimates, where we compare the effect of the treatment on each education group to the omitted group, which in this case will be those that do not go on to

tertiary education. The coefficients on these interaction terms tell us whether the Bright Futures Program makes it more likely that those who attend postsecondary institutions decide to locate in Florida after they complete schooling. The assumption with this estimation strategy is that the change in probability of residing in Florida that is observed for those with lower levels of education is what we would have observed for those with higher levels had this program not been implemented.

5.4 Labor Market Conditions

One concern with the given estimation strategy is that there may be other factors changing at the same time which impact the location decision of an individual. Particularly, we might be concerned that there was a shift in labor market conditions in Florida that coincided with the adoption of the scholarship program. For this to be driving any results, it would need to be the case that the labor market in Florida changed in such way that college-educated individuals who graduated high school in or after 1997 were more likely to remain in-state, while not having a similar impact on the location decisions of those with no college experience.

The year fixed-effects mean that annual labor market conditions cannot be explicitly controlled for in the analysis. However, we can use descriptive statistics to examine any changes that are occurring, and how these changes might impact location decisions. Table 7 uses data from the Current Population Survey (CPS)[7] to compare changes in labor market conditions in Florida with those in the rest of the Southern U.S. as well as the entire U.S. The control period for this table indicates the years in which those graduating high school in 1996 and before would likely be entering the job market, if they went on to college.

[7] Data were obtained from the IPUMS-CPS project at the University of Minnesota Population Center, http://cps.ipums.org/cps/.

Panel A of Table 7 shows changes in the average of real annual median income by education level[8]. The changes to median income in Florida, particularly for the College group, are very similar to the rest of the South and U.S. overall. Panel B shows unemployment rates by level of education. Here we see that for those not going on to college, the increase in unemployment between the treatment and control periods is much smaller in Florida than in the South and overall U.S. For those who did go on to college, the increase in unemployment was slightly less than in the South, but greater than for the rest of the U.S.

Overall, Table 7 indicates that the changes in labor market conditions between control and treatment periods in Florida were similar to the changes in other states for college-educated individuals. For those without any college education, the changes in conditions in Florida are favorable compared to other states. These statistics seem to indicate that, if anything those who did not continue education beyond high school would be disproportionately influenced to remain in Florida. Based on the estimation strategy, this would work against finding significant results for the program.

6 Results

6.1 Basic Specification

The results of the basic probit specification are presented in the first column of Table 8. This specification involves only the distinction between those who go on to some form of college and those who do not. We first note that the coefficient on the treatment alone is estimated to be essentially zero. This is consistent with the idea that treatment should only impact those with higher levels of education.

[8] Median income is used because of significant changes to the top-coding of values by the CPS over the period of interest.

Recall that the dependent variable is whether or not the individual resides in the state of Florida at the time they are surveyed. Thus, a positive coefficient indicates that the variable being examined increases the likelihood that the individual resides in Florida after completing his or her education. We see from the demographic characteristics, for example, that black and Hispanic individuals who are born in Florida are much more likely to still reside in Florida when they are age 23 to 27 than white individuals who are born in Florida.

From the educational attainment variable (*college)* we find that, as expected, those with higher levels of education are less likely to be located in Florida after completing their schooling. According to the basic specification, an individual who continues education past high school, all else equal, is roughly 9.8% less likely to live in Florida than an individual who has a high school education or less.

As mentioned previously, the coefficient of greatest interest is that on the interaction term involving the level of educational attainment and the treatment dummy. From the results of this basic specification we see that the treatment does have a significant positive impact on the likelihood that those going to college locate in Florida after completing their education. The coefficient on the interaction is significant at the 5% level, and indicates that the treatment increases the probability of locating in Florida by roughly 3.4 percentage points.

While the results of the basic specification show a statistically significant increase in the likelihood of a college educated individual locating in Florida, this may or may not indicate that the substantial expenditures of the subsidization program are justified. A rough, back-of-the-envelope calculation may help shed some light on the actual economic significance of these results.

Using data available from the Florida Department of Education's Office of Student Financial assistance[9], we can approximate the cost of keeping an additional college educated individual in Florida. Consider, the first cohort eligible for the program, those graduating high school in 1997. There were an estimated 103,700 high school graduates, of which roughly 50.5 percent, or about 52,368, will go on to some form of college. The estimate of a 3.4 percentage point increase in the probability of college-educated locating in Florida means an additional 1780 individuals will locate in Florida after completing their education.

To approximate the amount spent on this first cohort, we begin with the initial number of awards disbursed and combine this with statistics on rates of meeting renewal requirements and average award amounts[10]. Doing so produces an estimate of $231,906,772. Combining this with the above information indicates Florida spent $130,285 per additional college educated worker.

Worth noting here is that there may be other benefits to this subsidization program, such as improved opportunity, which are not captured by this calculation. Also, whether this figure indicates that the program is justified depends on the ultimate impact on the stock of educated labor[11], as well as the length of time these individuals remain in Florida.

6.2 Disaggregating Treatment Effects by Specific Level of Education

There are various levels and types of education beyond high school. We might expect that mobility rates vary across these different levels. For example, the occupations available to those with some college experience but no degree may differ from those who complete a

[9] These data are available online at http://www.floridastudentfinancialaid.org/SSFAD/bf/bffacts.htm.
[10] For the first year, the total cost is provided exactly by the Office of Student Financial Aid. After this, total annual costs are provided, but are a combination of spending on initial and renewing students.
[11] This study does not measure the extent to which retaining "native" educated workers affects the location decisions of educated workers from other states.

bachelor's degree. Mobility may differ across these occupations, causing the mobility of individuals with some college experience to be different from those with a degree.

At the same time, the impact of the subsidization program may differ among these groups. For example, individuals continuing education at a junior college tend to remain in state for school at a higher rate than those going to four-year institutions. In this case the treatment program may have a more substantial impact on the schooling location decision of those going on to universities, which means the impact on post-education location decision may be different. Further, as seen in Table 2, the majority of those enrolling in the Bright Futures Program do so in 4-year institutions, so we are perhaps most interested in the treatment effect on these individuals.

The second column of Table 8 shows the results for the specification in which level of education beyond high school has been decomposed. The omitted education level in these regressions is again those with no college experience. From the coefficients on the level of education alone, we see that those with bachelor's degrees are estimated to be the most mobile.

Table 9 presents the chi-square tests of differences in the coefficients. The estimated coefficients for those with postgraduate degrees[12] and those with bachelor's degrees are not significantly different. Those with postgraduate degrees and bachelor's degrees are, however, significantly less likely to live in Florida after completing their education than those with associate's degrees, as well as those with some college experience but no degree.

The coefficients on the interactions between educational attainment and treatment show that, as anticipated by the previous discussion, the largest estimated effect is for those who go on to earn a bachelor's degree. We then observe positive treatment effects that are of smaller magnitude for those with associate's degrees, some college experience without a degree, and

[12] Because of the small sample size of individual degree types over the specified age range, those with Masters, Doctorate, and Professional degrees are all included in the Postgraduate category.

those with advanced degrees, in that order. However, the null hypothesis that the treatment effect is the same for all of these levels of education cannot be rejected.

6.3 Robustness

The basic comparison being drawn in this research is in the propensity to locate in Florida between people who graduated high school prior to 1997 and people who graduated after this. Based on the years of the surveys being used and the age group being studied, the comparison is being drawn between individuals who graduated high school from 1991-1996 and those who graduated from 1997-2001[13]. Because of this, we may be concerned that we are comparing individuals graduating in environments that differ substantially in ways other than exposure to the Bright Futures Scholarship Program.

In order to alleviate some of these concerns, we adjust the sample so that it includes individuals who graduated high school in smaller ranges of years surrounding the beginning of the program. By doing so, we may feel more confident that the driving force behind the change in likelihood of locating in Florida is the defined treatment. The obvious tradeoff for this improvement in controlling for unobserved changes is a significant decrease in sample size. For example, after restricting the sample to those graduating in the two years before (1995-96) and two years after treatment (1997-98), we are left with fewer than half of the original observations, with a sample of 7,101 observations. Table 10 provides an illustration of how treatment is assigned for the 2-year specification.

[13] Those that are 27 in the 2000 Census are assumed to have graduated high school in 1991. Those that are 23 in the 2006 American Community Survey are assumed to have graduated high school in 2001. For any given age group, we compare over six years.

The first three columns of Table 11 presents the results of the basic[14] specification using various samples based on the number of years before and after initiation of treatment. Again the coefficient on the interaction of education and treatment is positive and indicates exposure to the program increases the probability of residing in Florida by 3 to 4 percentage points. The point estimates for the tightest sample are slightly larger than those in the full sample, though less precisely estimated. Overall, restricting the sample to a smaller time period has not altered the fundamental results from the previous regressions.

The fourth column of Table 11 presents results for a specification that attempts to control for assignment error. As mentioned previously, individuals are assumed to have graduated high school, and are assigned to treatment/control groups, in the year they are age 18. To eliminate some of the concern over incorrect assignment to treatment and control groups, the basic specification was performed on a sample which dropped those who were 18 in 1996 or 1997. It is highly likely that those who were 18 in 1995 or before (1998 or after) actually graduated before (after) the program was initiated. The results for this sample are quite similar to other specifications, indicating a treatment effect of around 3.2 percentage points.

Another concern with the research design being employed arises from the defined comparison group. In this study, the comparison group contains those individuals who do not continue education past high school by the time they are surveyed. The problem comes about if the program changes the sample of individuals who choose to continue their education. In this case, those on the margin who are induced into attending college may be less mobile than those who attended college before the program. Thus the proportion of higher educated remaining in the state will increase, even if the treatment did not impact each individual's location decision.

[14] The "basic" specification refers to a model including the aggregated *college* variable and year fixed- effects.

As discussed in the literature review, past studies on state merit-based aid programs indicated there seems to a much smaller effect on the decision of whether to attend college than on the decision of where to attend. This may alleviate some concern. To further address the issue, we can also change the comparison group to include only high school dropouts. It is much less likely that this group will see a change in composition as a result of the tuition subsidization program. High school graduates who do not go on to college will now be a separate group. The results of this specification are presented in Table 12.

The estimated treatment effect for the highly educated (college) group has been reduced from previous specifications and is no longer significant. However, the estimated coefficient still indicates an increase of nearly 3 percentage points in the likelihood of remaining in Florida with the treatment. The estimated impact of the program on those who graduate high school is negative, of much smaller magnitude and insignificant. The treatment coefficients for the two groups, while both not significantly different from zero, are significantly different from each other (p-value of 0.03). This provides at least some evidence that there may not be much change in the composition of the group graduating from high school before and after the implementation of the program.

Another way to check the validity of the results would be to run the same regressions with other (similar) states that did not implement a program similar to that of Florida. This can check, for example, whether the results in Florida may be due simply to the construction of the control and treatment groups. As mentioned in Section 3, many of the states adopting merit-based programs are in the south. This limits somewhat the ability to compare with Florida's closest neighboring states. There are, however, a few southern states that did not adopt such programs, or adopted them after the period of study. Table 13 shows the basic specification

results for Florida and three other states that did not have substantial programs in place by 2001. For each state, the treatment and control groups were constructed as described for Florida

The results for the comparison states indicate that the construction of the control and treatment groups alone cannot explain the increase in propensity of residing in Florida for college-educated natives. None of the comparison states examined have a significant coefficient on the interaction term of interest. Alabama is the only state with a significant increase in propensity to remain in-state for all natives (as shown by the significant positive coefficient on the treatment dummy), but the interaction term indicates the highly-educated group were relatively less likely than their less-educated counterparts to remain in Alabama once completing schooling.

The basic results are robust to a number of additional alternative samples. For example, dropping any particular age of individual from the sample has no significant impact on the results. Similarly, dropping any specific survey year produces no substantial changes[15]. In particular, dropping the survey years in which there are no individuals from the treatment group (2000-2001) or the year in which there are no individuals from the control group (2006) do not change the results significantly.

7 Conclusion

A recent trend in higher education involves states providing broad merit-based tuition subsidies to in-state high school graduates that meet basic requirements. The justification of these programs centers on improved access to higher education, allowing middle class families affordable college choices, and enticing the state's brightest students to stay to attend college.

[15] The results of these robustness checks are available upon request.

Using micro data from the 2000 Census and the subsequent annual ACS, and focusing on the Florida Bright Futures Scholarship Program, this study identifies the extent to which state merit-based aid programs increase the likelihood that the state retains its brightest young students after they complete their education. The study utilizes a treatment-control design and assigns individuals to treatment based on the year in which they are most likely to have graduated from a Florida high school.

The results show that there is a significant positive effect from the program on the likelihood that college educated individuals will still be residing in Florida at the time they are surveyed. This study provides evidence that state funding of higher education may allow the state to capture some returns to its investment, at least in the period shortly after individuals complete their education. More research is needed to determine the extent to which these results can be generalized to other states.

References

Angrist, J., 1993. The effects of veterans benefits on education and earnings. Industrial and Labor Relations Review 46(4), 637-652.

Angrist, J., Krueger, A.B., 1991. Does compulsory school attendance affect schooling and earnings? Quarterly Journal of Economics 106(4), 979-1014.

Bettinger, E., 2004. How financial aid affects persistence. NBER Working Paper No. 10242.

Bound, J., Groen, J., Kezdi, G.G., Turner, S., 2004. Trade in university training: cross-state variation in the production and stock of college-educated labor. Journal of Econometrics 121, 143-173.

Bound, J., Holzer, H.J., 2000. Demand shifts, population adjustments, and labor market outcomes during the 1980s. Journal of Labor Economics 18(1), 20-54.

Bound, J., Turner, S., 2002. Going to war and going to college: did world war II and the G.I. bill increase educational attainment for returning veterans? Journal of Labor Economics 20(4), 784-815.

Cornwell, C., Mustard, D.B., Sridhar, D.J., 2006. Enrollment effects of merit-based aid: evidence from Georgia's HOPE program. Journal of Labor Economics 24(4), 761-786.

Dee, T.S., 2004. Are there civic returns to education? Journal of Public Economics 88(9-10), 1697-1720.

Dynarski, S., 2000. Hope for whom? Financial aid for the middle class and its impact on college attendance. National Tax Journal 53(3), 629-661.

Dynarski, S., 2003. Does aid matter? Measuring the effect of student aid on college attendance and completion. American Economic Review 93(1), 279-288.

Dynarski, S., 2008. Building the stock of college-educated labor. Journal of Human Resources 43(3), 576-610

Glaeser, E.L., Scheinkman, J.A., Shleifer, A., 1995. Economic growth in a cross-section of cities. Journal of Monetary Economics 36, 117–143.

Greenwood, M.J., 1997. Internal migration in developed countries. In: Rosenberg M.R., Stark, O. (Eds.). Handbook of Population and Family Economics, Vol. lB. Amsterdam: North-Holland, 647-720.

Groen, J.A., 2004. The effect of college location on migration of college-educated labor. Journal of Econometrics 121, 125-142.

Hansen, W.L., 1983. The impact of student financial aid on access. In: Froomkin, J. (Ed.). The Crisis in Higher Education. New York: Academy of Political Science, 84-96.

Heitmueller, A., 2005. Unemployment benefits, risk aversion, and migration incentives. Journal of Population Economics 18(1), 93-112.

Holzer, H.J., 1987. Informal job search and black youth unemployment. American Economic Review 77(3), 446-452.

Kane, T.J., 1994. College entry by blacks since 1970: the role of college cost, family background and the returns to education. Journal of Political Economy 102(5), 878-911.

Kane, T.J., 2003. A quasi-experimental estimate of the impact of financial aid on college-going. NBER Working Paper No. 9703.

Lochner, L., Moretti, E., 2004. The effects of education on crime: evidence from prison inmates, arrests, and self-reports. American Economic Review 94(1), 155-189.

Marmaros, D., Sacerdote, B., 2002. Peer and social networks in job search. European Economic Review 46, 870-879.
Meyer, B.D., 1995. Natural and quasi-experiments in economics. Journal of Business and Economic Statistics 13(2), 151-161.
Moretti, E., 2004. Estimating the social return to higher education: evidence from longitudinal and repeated cross-sectional data. Journal of Econometrics 121, 175-212.
Norton E., Wang H., Ai C., 2004. Computing interaction effects and standard errors in logit and probit models. Stata Journal 4(2), 103–116
Rosenzweig, M.R., Wolpin, K.I., 2000. Natural 'natural experiments' in economics. Journal of Economic Literature 38(4), 827-874.
Ruggles, S., Sobek, M., Alexander, T., Fitch, C., Goeken, R., Hall, P., King, M., Ronnander, C., 2008. Integrated Public Use Microdata Series: Version 4.0. Minnesota Population Center, Minneapolis.
Seftor, N., Turner, S., 2002. Back to school: federal student aid policy and adult college enrollment. Journal of Human Resources 37(2), 336-352.
Sjaastad, L.A., 1962. The costs and returns of human migration. Journal of Political Economy 70(5), 80-93

Table 1:
Percentages of High School Graduates in Florida Meeting Eligibility Requirements and Accepting Awards

Academic Year	*% Of H.S. graduates eligible for Bright Futures Awards*	*% Of HS graduates accepting Bright Futures Awards*
1997-1998	29.6%	22.9%
1998-1999	29.8%	23.5%
1999-2000	31.7%	25.4%
2000-2001	34.0%	27.6%
2001-2002	33.4%	27.2%

Note: Table drawn from statistics provided by Florida Department of Education, Office of Student Financial Assistance, www.floridastudentfinancialaid.org.

Table 2:
Disbursement of Bright Futures Awards by Type of Institution

Academic Year	*Public State Universities*	*4-Year Private Institutions*	*Public Community Colleges*
1997-98	63.1%	11.0%	25.6%
1998-99	66.6%	10.9%	22.3%
1999-00	68.9%	10.5%	20.3%
2000-01	69.6%	10.3%	19.9%
2001-02	71.1%	10.7%	17.9%

Note: Table drawn from statistics provided by Florida Department of Education, Office of Student Financial Assistance, www.floridastudentfinancialaid.org.

Table 3:
Treatment/Control Assignment

2000	*2001*	*2002*	*2003*	*2004*	*2005*	*2006*
23	23	23	23	23	23	23
24	24	24	24	24	24	24
25	25	25	25	25	25	25
26	26	26	26	26	26	26
27	27	27	27	27	27	27

Notes: Columns indicate survey year, individual cell entries represent age at the time of survey. Cells shaded in gray indicate age/survey year groups that are assigned to treatment. These groups are assumed to have graduated high school in or after 1997.

Table 4:
Descriptive Statistics by Treatment Type

	Control	*Treatment*
Observations	7682	7815
Female	47.0%	49.3%
Black	21.3%	20.2%
Asian	0.9%	1.2%
Hispanic	7.1%	9.5%
College	50.5%	49.2%
Florida Resident	66.1%	71.0%
Average Age	25.4	24.6

Notes: Entries show percentages of various characteristics by group. Control and treatment group assigned as discussed in section 5.1. The "College" variable indicates whether or not an individual went on to receive any formal education beyond high school.

Table 5:
Educational Attainment by Treatment Type

	Control	*Treatment*
Less than HS	17.0%	16.3%
HS Grad	32.5%	34.5%
No College	**49.5%**	**50.8%**
Some College	21.7%	19.5%
Associate's	6.6%	7.2%
Bachelor's	18.5%	19.7%
Postgraduate	3.7%	2.8%
College	**50.5%**	**49.2%**

Notes: Entries show percentages of educational attainment by group. Control and treatment group assigned as discussed in section 5.1. The "College" variable indicates whether or not an individual went on to receive any formal education beyond high school.

Table 6:
Probability of Residing in Florida by Treatment Type

	Control	*Treatment*	*Difference*	*Compared to "No College"*
Less than HS	74.5%	77.5%	3.0%	--
HS Grad	71.6%	74.5%	2.9%	--
No College	**72.6%**	**75.5%**	**2.9%**	**--**
Some College	64.2%	69.1%	4.9%	2.0%
Associate's	66.3%	74.2%	7.9%	5.1%
Bachelor's	52.9%	61.7%	8.7%	5.9%
Postgraduate	55.3%	60.7%	5.4%	2.5%
College	**59.7%**	**66.4%**	**6.7%**	**3.8%**

Notes: Entries show percentages of Florida natives residing in Florida at time of survey by level of educational attainment and group. Control and treatment group assigned as discussed in section 5.1. The "College" variable indicates whether or not an individual went on to receive any formal education beyond high school. The last column shows a simple difference-in-difference comparing treatment minus control probability between each level of higher education and the "no college" group.

Table 7:
Labor Market Conditions

Panel A: Median Income			
	Control Period (1995-2000)	Treatment Period (2001-2006)	Percentage Change
No College			
Florida	$22,692	$24,640	8.6%
Southern Region	$23,551	$24,977	6.1%
United States	$24,699	$26,059	5.5%
College			
Florida	$36,675	$38,994	6.3%
Southern Region	$38,153	$40,855	7.1%
United States	$39,156	$41,509	6.0%

Panel B: Unemployment Rates			
	Control Period (1995-2000)	Treatment Period (2001-2006)	Percentage Change
No College			
Florida	4.46	4.57	2.5%
Southern Region	5.23	5.77	10.3%
United States	5.94	6.37	7.2%
College			
Florida	2.44	2.81	15.2%
Southern Region	2.58	3.01	16.7%
United States	2.83	3.16	11.7%

Notes: Data used in this table come from the Current Population Survey (CPS). Median income is the average of the annual median income over the period listed, presented in 2007 USD. The "College" category includes all individuals who went on to some form of formal education beyond high school. Figures included in this table represent post college-aged individuals (ages 23-65) who are part of the labor force. Individuals reporting a wage income of 0 are omitted from income calculations.

Table 8:
Basic Specification and Disaggregated Education Probit Results

	Basic	**Disaggregated**
Treatment	0.0025	0.0015
	(0.0174)	(0.0174)
College*Treament	0.0339	
	(0.0147)**	
College	-0.0977	
	(0.0106)***	
Postgraduate*Treatment		0.0084
		(0.0412)
Bachelors*Treatment		0.0487
		(0.0185)***
Some College*Treatment		0.0189
		(0.0192)
Associates*Treatment		0.0424
		(0.0287)
Postgraduate		-0.1282
		(0.0309)***
Bachelors		-0.1585
		(0.0155)***
Some College		-0.0708
		(0.0143)***
Associates		-0.0348
		(0.0227)
Female	-0.0220	-0.0198
	(0.0076)***	(0.0076)***
Black	0.1889	0.1857
	(0.0080)***	(0.0081)***
Asian	-0.1276	-0.1150
	(0.0387)***	(0.0386)***
Hispanic	0.1062	0.1055
	(0.0118)***	(0.0118)***
Age	-0.0050	-0.0046
	(0.0031)*	-0.0031
Year Fixed Effects	Yes	Yes
Observations	15497	15497

Notes: The dependent variable is a dummy for whether the individual lives in Florida when surveyed. Reported values are estimated marginal effects, with standard errors in parentheses. Interaction effects have been calculated following Norton et. al (2004). * indicates significance at 10% level, ** indicates significance at 5% level, *** indicates significance at 1% level.

Table 9:
Coefficient Tests for Disaggregated Specification

Null Hypothesis (No Difference in Coefficients)	χ^2	P-value
Bachelors = Postgraduate	1.10	0.294
Bachelors = Associates	24.65	0.000
Bachelors = Some College	25.19	0.000
Some College = Postgraduate	3.18	0.075
Some College = Associates	2.26	0.324
Associates = Postgraduate	6.68	0.010
Bachelors*Treatment = Postgraduate*Treatment	0.93	0.336
Bachelors*Treatment = Associates*Treatment	0.04	0.842
Bachelors*Treatment = Some College*Treatment	1.82	0.177
Some College*Treatment = Postgraduate*Treatment	0.06	0.807
Some College*Treatment = Associates*Treatment	0.56	0.454
Associates*Treatment = Postgraduate*Treatment	0.51	0.475

Notes: Table presents the chi-square statistic and p-value for tests of differences across coefficients for disaggregated specification. In each case, the null hypothesis is that the coefficients on dummy variables or interaction of dummy variables are not different.

Table 10:
Treatment/Control Assignment in 2-year Specification

Survey Year						
2000	*2001*	*2002*	*2003*	*2004*	*2005*	*2006*
23	23	23	23	23	23	23
24	24	24	24	24	24	24
25	25	25	25	25	25	25
26	26	26	26	26	26	26
27	27	27	27	27	27	27

Notes: Columns indicate survey year, individual cell entries represent age at the time of survey. Cells shaded in gray indicate age/survey year groups that are assigned to treatment. These groups are assumed to have graduated high school in 1997 or 1998, the first two years of the program. Cells not shaded are assumed to have graduated in 1995 or 1996, the final two years before the program was implemented. Cells shaded in black indicate age/survey years omitted from this specification.

Table 11:
Basic Specification Regression Results for Various Alternative Samples

	3-year	2-year	1-year	Less Ambiguous Treatment
Treatment	-0.0123	-0.0161	0.0000	0.0002
	(0.0223)	(0.0287)	(0.0241)	(0.0314)
College*Treatment	0.0334	0.0382	0.0426	0.0321
	(0.0183)*	(0.0220)*	(0.0308)	(0.0170)*
College	-0.1103	-0.1119	-0.1139	-0.0937
	(0.0138)***	(0.0166)***	(0.0235)***	(0.0119)***
Female	-0.0275	-0.0337	-0.0466	-0.0147
	(0.0093)***	(0.0112)***	(0.0156)***	(0.0086)*
Black	0.1828	0.1669	0.1555	0.1980
	(0.0103)***	(0.0123)***	(0.0178)***	(0.0089)***
Asian	-0.1122	-0.0467	0.0076	-0.1738
	(0.0451)**	(0.0525)	(0.0713)	(0.0453)***
Hispanic	0.1045	0.1139	0.1001	0.1086
	(0.0145)***	(0.0169)***	(0.0239)***	(0.0136)***
Age	-0.0097	-0.0090	0.0034	-0.0026
	(0.0065)	(0.0123)	(0.0057)	(0.0039)
Year Fixed Effects	Yes	Yes	Yes	Yes
Observations	10231	7101	3623	11874

Notes: The first three columns present results of various specifications based on number of years included on either side of program initiation. Column 4 drops those who were 18 in 1996 or 1997 to try and alleviate assignment error. The dependent variable in all regressions is a dummy for whether the individual lives in Florida when surveyed. Reported values are estimated marginal effects, with standard errors in parentheses. Interaction effects have been calculated following Norton et. al (2004). * indicates significance at 10% level, ** indicates significance at 5% level, *** indicates significance at 1% level.

Table 12:
Regression Results: HS Dropouts as Comparison Group

Treatment	0.0092
	(0.0237)
College*Treatment	0.0279
	(0.0207)
College	-0.1059
	(0.0153)***
HS Graduate * Treatment	-0.0095
	(0.0227)
HS Graduate	-0.0122
	(0.0166)
Female	-0.0217
	(0.0076)***
Black	0.1884
	(0.0080)***
Asian	-0.1274
	(0.0387)***
Hispanic	0.1058
	(0.0118)***
Age	-0.0050
	(0.0031)
Year Fixed Effects	Yes
Observations	15497

Notes: The dependent variable is a dummy for whether the individual lives in Florida when surveyed. Reported values are estimated marginal effects, with standard errors in parentheses. Interaction effects have been calculated following Norton et. al (2004). * indicates significance at 10% level, ** indicates significance at 5% level, *** indicates significance at 1% level.

Table 13:
Regression Results: Basic Specification Cross-State Comparisons

	Florida	**Alabama**	**North Carolina**	**Texas**
Treatment	0.0025	0.0650	0.0043	-0.0025
	(0.0174)	(0.0223)***	(0.0184)	(0.0108)
College*Treatment	0.0339	-0.0178	0.0046	-0.0008
	(0.0147)**	(0.0196)	(0.0156)	(0.0093)
College	-0.0977	-0.0770	-0.0800	-0.0262
	(0.0106)***	(0.0134)***	(0.0106)***	(0.0067)***
Female	-0.0220	0.0091	-0.0147	0.0114
	(0.0076)***	(0.0099)	(0.0079)*	(0.0047)**
Black	0.1889	0.0502	0.0749	0.1035
	(0.0080)***	(0.0109)***	(0.0089)***	(0.0063)***
Asian	-0.1276	-0.3222	-0.3441	-0.1701
	(0.0387)***	(0.1022)***	(0.0539)***	(0.0253)***
Hispanic	0.1062	-0.3953	-0.3349	0.1103
	(0.0118)***	(0.0602)***	(0.0438)***	(0.0048)***
Age	-0.0050	-0.0006	-0.0023	-0.0001
	(0.0031)*	(0.0041)	(0.0033)	(0.0019)
Year Fixed Effects	Yes	Yes	Yes	Yes
Observations	15497	8130	11982	32534

Notes: The dependent variable is a dummy for whether the individual lives in their respective state of birth when surveyed. Reported values are estimated marginal effects, with standard errors in parentheses. Interaction effects have been calculated following Norton et. al (2004). * indicates significance at 10% level, ** indicates significance at 5% level, *** indicates significance at 1% level.