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Merit aid and post-college retention in the state

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ABSTRACT

One goal of state merit-based financial aid programs is to increase the stock of college-educated labor in the state by retaining college-educated persons in the state after college. However, there has been surprisingly little research on whether state merit aid programs are effective at this goal. This paper investigates the effect of state merit aid programs on the post-college location of 24–30 year olds. We use decennial census and American Community Survey microdata to consider post-college retention effects in the 25 states that implemented merit aid programs between 1991 and 2004. Our preferred specification implies that strong state merit aid programs on average increase the probability that a college attendee lives in his or her birth state during ages 24–30 by 2.76 percentage points. We also estimate the effect for individual states and find meaningful differences across states in the effect of merit aid programs on in-state post-college retention and explore explanations for these differences.

1. Introduction

Since the early 1990s new merit-based student financial aid programs have been created in more than two dozen states. These programs award college scholarships to in-state students who meet a merit requirement based on high school GPA and sometimes SAT/ACT score. Several studies have investigated the effects of merit aid programs on education outcomes such as the probability that a high school student will attend college and the percentage of students who stay in-state to go to college; see Dynarski (2000, 2002, 2004, 2008) and Cornwell et al. (2006). But there also appears to be a desire for merit aid programs to increase the quality of the workforce, in part by retaining recent college attendees in the state after they complete their college education (Groen, 2011). If merit aid scholars leave the state upon completing their undergraduate studies, the state's return on its expenditure is reduced; higher educated workers pay more in taxes and impose less cost on the public sector for services (Trostel, 2010), and attracting skilled workers may result in higher economic growth rates (Glaeser and Saiz, 2004; Moretti, 2004; Florida et al., 2008), lower unemployment rates (Winters, 2013) and perhaps a better quality of life (Shapiro, 2006; Winters, 2011a).[1]

Despite this interest in post-college retention of merit aid students, there has been little research conducted on the subject. This paper attempts to help fill this gap by exploring the effect of merit-based aid on post-college in-state retention using data from the 25 states that adopted merit aid programs between 1991 and 2004.

Studies of the location decisions of college graduates such as Perry (2001) find that students are more likely to live in the state in which they attend college. One explanation is that students may develop location-specific networks with friends and employers while in college and these may make them more likely to stay in the area after college.[2] However, students may choose to go to college in the state where they expect or hope to reside after completing college. Thus, measuring the effect of attending college in an area on a student's post-college residence requires controlling for this potential endogeneity. Groen (2004) controls for endogeneity

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[1] Additionally, parent-voters may be particularly interested in which college-educated workers reside in the state, i.e., they may want their college-educated children to stay in the state.

[2] Winters (2011b) suggests that the widely documented correlation between local human capital levels and future population growth of U.S. metropolitan areas is largely driven by recent college attendees staying in the area where they attended college.

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of college decisions and finds that there is a modest magnitude causal effect of attending college in a state on the likelihood of living in that state after graduation. However, he does not examine the effects of state merit aid programs on post-college retention.[3]

Merit aid programs likely increase the probability that a student goes to college in-state rather than out-of-state (Dynarski, 2004; Cornwell et al., 2006; Orsuwan and Heck, 2009; Zhang and Ness, 2010). The hope is that encouraging students to stay in-state for college will also encourage them to stay in-state after college as they begin their careers. However, it is possible that a student who attends college in-state because of a merit-based scholarship program might be almost or even just as likely to live out-of-state after college as she would have been had she gone to college out-of-state. Additionally, many students would have gone to college in-state even in the absence of a merit aid program, and for them there is no obvious link between being given a merit aid scholarship and living in-state post college. Thus, whether a merit aid program can increase the stock of college educated workers in a state by affecting post-college location decisions is ultimately an empirical question.

To the best of our knowledge Hickman (2009), Sjoquist and Winters (2013), and Hawley and Rork (2013) are the only published papers that address the effect of a merit-based scholarship program on post-college retention.[4] Hickman (2009) investigates the effect of the introduction in 1997 of Florida's merit-based scholarship program on the post-college retention of students in Florida. He uses the 2000 Census of Population and the American Community Survey (ACS) for 2001 through 2006 to construct a treatment group and a control group. The treatment group consists of anyone born in Florida who was 18 years of age in 1997 or later, and thus are assumed to have been exposed to the treatment, while the control group consists of individuals born in Florida who were age 18 in 1996 or earlier. He considers individuals between 23 to 27 years of age who are not in school or the military. Hickman's dependent variable is whether the individual resides in Florida after college. His analysis is essentially a difference-in-differences model, comparing individuals with no college to those with at least some college, both pre- and post-merit aid program adoption. Thus, he includes both the treatment dummy and its interaction with a dummy measuring whether the individual has any post-secondary education. The coefficient on the treatment dummy is not statistically significant, but the coefficient on the interaction term is. He finds that the Florida scholarship program increased the probability that a 23–27 year old with some college located in Florida by 3.4 percentage points.

Sjoquist and Winters (2013) use student administrative records from the University System of Georgia (USG) matched with employment records from the Georgia Department of Labor to explore the effect of Georgia's HOPE Scholarship program on post-college retention of USG students in the Georgia workforce. They measure post-college retention by whether a student is employed in Georgia X years after first enrolling in college, where X varies from 4 to 12 years. They find that HOPE reduced the percentage of high ability students in the USG who are employed in Georgia several years after college, but there was no meaningful difference for low ability students. They interpret this to suggest that HOPE kept many high quality students in-state for college but many of these students left the state after college. Sjoquist and Winters (2013) also conduct a secondary analysis that uses census and ACS data for Georgia similar to Hickman's (2009) analysis for Florida. They find small and statistically insignificant effects for Georgia.

Hawley and Rork (2013) estimate the effect of merit aid programs on out-migration of college-educated adults. They use microdata from the decennial census to calculate five-year out-migration rates for each state for 1980, 1990, and 2000 and use the ACS to calculate one-year out-migration rates for each state for 2005–2009 which they combine into one migration rate to approximate the 5-year migration flow. They consider the migration rate for five groups: the entire population, the entire college educated population, and the college educated population aged 22–25, 22–34 and 35–65. Since a merit aid program could have been adopted during the five year migration period, they define merit exposure using "windows" based on time elapsed since the program was adopted. They find that younger adults are more likely to migrate from states with a merit aid program while older adults are less likely, resulting in no net effect of a merit aid program on the state out-migration rate.[5]

Hickman considers only one state, but 25 states adopted merit-based financial aid programs between 1991 and 2004 (see Table 1). In this paper we follow Hickman's basic approach but expand the analysis to all states with a merit aid program and include non-merit states in the comparison group. We seek to address whether the positive effects on post-college retention found by Hickman are unique to Florida or if they generalize to other merit-adopting states. This is an important question with implications for both researchers and policymakers.

Merit aid programs differ in many ways, including the size of the award and the number of students who are awarded scholarships. We identified 9 programs as being much more significant; we classify these as "strong" merit aid programs. The last two columns of Table 1 contain the percent of enrolled students receiving a merit award and size of the merit award per recipient for 2009–2010. As can be seen, the 9 programs have significantly larger participation rates and larger average awards. The classification for three states perhaps needs some explanation. West Virginia was included as a strong merit aid state because it has a very high average award, despite a somewhat lower participation rate. California has the highest average award among the weak merit aid states, but is not classified as a strong merit aid state because its participation rate is very low. In addition, California has a low minimum

[3] Malamud and Wozniak (2012) examine the effects of college attendance in any state on the probability of out-migration from one's native state, instrumenting for college attendance using variation in the risk of induction through the military draft during the Vietnam War. They find causal evidence that college education increases out-migration, but their study does not focus on the effects of where the education was received.

[4] In a recent working paper, Fitzpatrick and Jones (2012) investigate the effect of merit aid on post-college migration, as well as on educational attainment. They employ an approach that is similar to ours and find that merit aid increases the probability of living in one's state of birth by one percentage point for their sample that includes non-college attendees. There are important differences between their paper and the current paper, such as: we examine the set of 25 states with merit aid while Fitzpatrick and Jones use 15; we distinguish between strong and weak merit aid programs but Fitzpatrick and Jones do not; we provide estimates by state-of-birth, Fitzpatrick and Jones do not; both papers provide estimates unconditioned on education but our main estimates focus on college attendees; we address measurement error in exposure due to not graduating at age 18 and going to high school in a non-birth state, Fitzpatrick and Jones do not.

[5] Our research is related to that of Hawley and Rork (2013), but there are several important differences. First, they focus on the recent flow of college educated persons while we focus on the probability of college-educated persons residing in their state of birth. Second, their analysis is complicated by having to combine five-year migration rates in the census with one-year migration rates in the ACS. Our retention variable is defined the same throughout our sample period. Third, they use all 21 merit aid programs that they identified regardless of how extensive the programs are, while our analysis focuses on 9 states with "strong" merit programs, although not exclusively. Fourth, we use annual data and allow for yearly variations in the merit variable, while Hawley and Rork use "windows" to account for merit aid programs that could have been adopted part way through the five-year period over which migration is measured. Finally, their treatment is whether the merit aid program existed during the period of migration, not whether the individual was eligible for merit aid. We compare individuals who were potentially eligible for merit aid to those who were not. So while our results could be similar to theirs, it would not be surprising if the results differed.