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State Merit Aid Programs: Responses by Florida Community Colleges

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State financial aid policies have long focused on need-based aid programs to reduce inequalities in higher education access and completion. During the last 15 years, however, many states have shifted toward broad-based merit aid programs (Dynarski, 2004). Although such aid programs can increase access, they can also encourage grade inflation in high school (Henry & Rubenstein, 2002) and provide incentives for college students to enroll in fewer and easier courses, withdraw from classes, and increase summer school credits (Cornwell, Kyung, & Mustard, 2005). Thus, although the new merit aid programs seem to increase the probability of enrolling in higher education, they can lead to student behavior that partially undermines academic achievement. The implementation of new financial aid programs may also provide postsecondary institutions with incentives to alter the way that they operate, particularly when they exist in increasingly difficult and competitive funding environments.

Despite the fact that community colleges currently enroll nearly half of all students in higher education (National Center for Education Statistics, 2006), previous research on the response of colleges to new aid programs has been largely limited to four-year colleges. A recent study conducted by the Community College Research Center (CCRC) sought to better understand how two-year public colleges react to new state merit-based financial aid programs by evaluating the institutional behavior of each of Florida's 28 community colleges before and after the Florida Legislature created the Florida Bright Futures Scholarship (FBFS) program in 1997. This Brief describes the FBFS program, the dataset and model for analysis used in the research, as well as the study's findings and conclusions.

Florida Bright Futures Scholarship Program

The Florida Bright Futures Scholarship (FBFS) program rewards "traditional" students for their academic achievement during high school by helping to finance their in-state postsecondary education. FBFS defines traditional students as those who matriculate at any Florida college in the fall term of the same year in which they graduated from high school. While these students, who must be Florida residents, apply for a scholarship by completing the Florida Financial Aid Application (FFAA) during their last year in high school, Bright Futures scholarships are awarded independent of a student's financial need. The program therefore intends to encourage better student preparation and performance, make college more affordable, and encourage more students to attend an in-state college (Office of Program Policy and Government Accountability [OPPAGA], 2003).

FBFS provides four types of awards: the Florida Academic Top Scholars Award (FATS), the Florida Academic Scholarship (FAS), the Florida Medallion Scholarship (FMS), and the Florida Gold Seal Vocational Scholarship (FGSV). The first three can be used at any of the state's public and private degree granting institutions; the latter is reserved for students pursuing vocational/technical postsecondary education. In order to receive an FBFS, students must satisfy minimum high school GPA and ACT/SAT test scores, with the requirements varying according to the type of FBFS. Recipients must maintain a minimum college GPA and must take a minimum of six non-remedial semester hours per term (Office of Student Financial Assistance, 2004).

Over 140,000 students received an FBFS for the 2005-2006 academic year, totaling more than $306 million; 18 percent of the recipients used their scholarship at a community college or private two-year institution (Office of Student Financial Assistance, 2006).

Possible Effects on Community Colleges

Long (2004a) outlined three main possible responses by postsecondary institutions to the introduction of new financial aid policies. First, most colleges and universities determine the amount of institutional aid they give by subtracting from the institutional cost of education all the aid that a student receives. Thus, the *crowding-out hypothesis* holds that colleges are likely to reduce the amount of institutional aid they provide when a new source of financial aid becomes available, and then redistribute the surplus among non-eligible students or reallocate it for other purposes (Kane, 2003).

Second, institutions may increase students' charges — tuition, room and board, or fees — in order to capture the revenues from the new program. This argument was first stated almost 20 years ago by former Secretary of Education William Bennett (1987). The viability of the Bennett hypothesis depends, however, on the flexibility that colleges have to modify student charges. In contrast with private institutions, tuition at public colleges is generally determined after negotiation with the State Legislature, which limits their institutional freedom to

modify tuition and fees in response to a new financial aid program (Long, 2002). This limited flexibility restricts the applicability of the Bennett hypothesis at public colleges. Moreover, the democratic mission of community colleges might deter them from increasing student charges even if they were able to do so. In Florida, each community college's board of trustees establishes tuition and fees, but they cannot be more than 15 percent above or 10 percent below the combined total of the fee schedule adopted by the State Legislature and the technology fee adopted by a board of trustees (2005 Florida Statutes, Title XLVIII, Chapter 1009, 1009.23).

Long's third possible response is that institutions may reduce quality-enhancing investments, such as instructional expenditures, if the new financial aid program gives them a competitive advantage over out-of-state schools. Out-of-state competition is not a major threat for community colleges, however, because they generally serve students who live within a reasonable commuting distance. Only 5.8 percent of students in the dataset we used in our analysis were out-of-state students, suggesting that Florida community colleges attract mostly in-state students. Moreover, only 4 out of Florida's 28 community colleges are located within 20 miles of state borders and in direct geographic competition with out-of-state colleges. Because of the limited applicability of the *competitive advantage hypothesis* to community colleges, we did not test it in this study.

It is important to note that a new merit aid program could also impact community colleges in other ways. For example, traditional-age students could decide to enroll in a four-year college instead of a two-year institution (Dynarski, 2004). Indeed, the most generous versions of the Bright Futures program, the FATS and the FAS, provide full tuition and fees coverage at any Florida public postsecondary institution — or 100 percent of tuition at a comparable public institution if the student enrolls at a private college. Less generous versions, the FMS and the FGSV, cover 75 percent of tuition and fees. (The Florida Legislature has since amended section 1009.535 of the Florida Statutes; beginning in fall 2006, FMS students who choose to attend a Florida public community college may receive an award of 100 percent of their tuition and fees for college credit courses leading toward an associate degree.)

Eligible students are likely to choose a four-year over a two-year college because FBFS decreases the cost of a four-year college relative to a two-year college. Thus, given the merit component of the program, high ability students who otherwise would have attended a community college may instead consider a four-year college. This *re-sorting hypothesis*, or "moving up" effect, preoccupies community college advocates because it may decrease the average educational level of students enrolled at community colleges, and may thus ultimately have a negative impact on the colleges' already low retention and graduation rates.

Responses by individual colleges to new scholarship opportunities for their students may also depend partly on each institution's financial situation and on the educational marketplace in which it is located. Public two-year colleges receive the bulk of their funding from state appropriations and local tax revenues. In many states colleges find themselves in an increasingly difficult funding environment, as other demands on state resources have squeezed their allocations (Kane, Orszag, & Gunter, 2003). While this trend is certainly evident among Florida community colleges, the way that it affects individual colleges varies across institutions.

The study summarized here tested the applicability of the crowding-out, Bennett, and re-sorting hypotheses for community colleges, after teasing out potentially confounding factors such as the trend in state appropriations and the behavior of four-year institutions.

Study Data

Our study used a unique administrative dataset obtained from the Florida Department of Education. It includes records of all Florida resident, first-time, degree-seeking community college students who enrolled in a college-credit course at any of Florida's 28 community colleges in the fall of years 1995 to 2000, which covers the period before and after the implementation of the FBFS program. The dataset includes the amount, type, and source of financial aid received by each student in the first semester of college and each student's college placement test scores. It also contains information on the demographic characteristics of all students, including gender, race/ethnicity, citizenship, and English language proficiency.

In addition, we obtained Integrated Postsecondary Education Data System (IPEDS) codes for the 28 Florida community colleges. Thus, our dataset could be merged with the IPEDS dataset. IPEDS is a set of annual surveys collected by the National Center for Education Statistics (NCES), designed to be an annual census of all primary providers of postsecondary education in the United States. From IPEDS, we extracted tuition information for two- and four-year colleges located in Florida, enrollment rates at Florida four-year institutions, and ZIP codes to compute distances between institutions. Our data were supplemented with information on high school graduates, community colleges' revenues, and enrollment at four-year colleges obtained directly from the Florida Department of Education, Division of Community Colleges.

Research Strategy

We used the introduction of the FBFS program as a source for a natural experiment to estimate its causal effect on various measures of community colleges' institutional behavior. In order to identify the FBFS program effect, we took advantage of the fact that it is open only to traditional-age students. We defined traditional-age students as those who were younger than age 19 by the time they entered college or were the same age at college entrance as at high school graduation. Since these students could not receive this type of aid before the implementation of the FBFS program, the FBFS effect is estimated by analyzing traditional-age students before and after the advent of the program. A natural within-state control group is formed by Florida resident students who delayed enrollment but were exposed to similar trends and economic shocks as the treatment group. To create a valid comparison group, we restricted our control group to those Florida resident students who were younger than age 25 when they entered college. This approach, using data for treatment and control groups before and after a policy change, is often called difference-in-difference regression (Meyer, 1995).

Additionally, a state level program effect as previously estimated in the literature (e.g., Long 2002, 2004a) may mask fundamental variation in responses across institutions due to differences in financial constraints and on the educational marketplace in which each college is located. Microdata allowed us to test heterogeneity in the program effect across community colleges, or the individual behavioral responses of each to the introduction of a new state merit aid program.

Study Results

Student and Institutional Characteristics

Regardless of the merit aid policy, traditional-age students received more institutional financial aid in the first term than those ("non-traditional" students) who delayed enrollment. Traditional-age students also had higher test scores than non-traditional students, especially in the math section of the SAT. Traditional-age students were more likely than non-traditional students to be female and White, to hold U.S. citizenship, and to be fluent in English both before and after the implementation of FBFS. We used a detailed set of observable characteristics in the regressions to control for pre-college differences between traditional-age and non-traditional students.

The average institution enrolled 8,500 full-time equivalent (FTE) students and managed a $5,000 annual budget per FTE student over the years 1995 to 2000, with $3,281 of these funds coming from the state as appropriations. With respect to measures of the level of competition within the educational marketplace, we found that the average distance between a community college and its closest four-year public college was 31 miles, and that the average number of four-year institutions within a 50-mile radius was seven. Moreover, an average community college in Florida faced competition from 11 postsecondary education institutions within a radius of 50 miles. These facts appear to suggest that, on average, the educational marketplace of Florida community colleges is quite competitive.

Crowding-Out Hypothesis

In contrast with the crowding-out hypothesis, community colleges in Florida seemed to increase institutional financial aid after the implementation of the FBFS program. As mentioned earlier, while the most generous versions of the state merit aid program cover 100 percent of tuition, the less generous versions cover only 75 percent. But to recruit good students, colleges can offer the remaining 25 percent of tuition to those awardees with a lesser scholarship. Therefore, not only does the award program serve as an "ability marker" to community colleges — indicating which are the higher ability students — but it also gives colleges an important tool for competing in that it makes them more financially attractive to high ability students. While traditional-age students previously had received higher amounts of institutional aid than non-traditional students, the FBFS program further increased the amount of institutional aid that traditional-age students received.

We found significant variation among the responses of the 28 community colleges. Some increased their first semester level of institutional aid by amounts as high as $250, while others decreased aid by as much as $100. Interestingly, the largest responses appear to have come from the smallest institutions (although the estimates of these responses have larger standard errors and are therefore more volatile).

Bennett Hypothesis

We also tested the applicability of the Bennett hypothesis to determine whether Florida community colleges increased tuition as a result of FBFS. Although public postsecondary institutions in Florida do not have much institutional freedom to modify their tuition, we found a small but statistically significant effect of about a $5 increase in tuition. This result is economically minor given a pre-policy average tuition of $1,300. Moreover, the effect vanished after controlling for tuition at the Florida State University System, suggesting an increasing trend at all Florida public postsecondary institutions. Therefore, we found no support among Florida community colleges for the Bennett hypothesis.

Re-Sorting Hypothesis

We tested the re-sorting hypothesis to determine whether the implementation of FBFS resulted in community college student bodies with lower math and verbal test scores using these scores as dependent variables. The FBFS could serve as an incentive to students to change their postsecondary education choice because the most generous scholarships in the program decrease the cost of a four-year college relative to a two-year college within the state. Hence, if students with high test scores re-sort toward four-year colleges, we would expect to observe a decrease in the average test scores of students at community colleges after the FBFS program began. State-level results for test scores did not confirm this hypothesis. Instead they suggest that, on average, the state community college system is not losing high ability students as a result of the Bright Futures program.

It should be noted, however, that while the effect of the introduction of the FBFS on the math test scores of community college students was not statistically significant for nine institutions, for the remaining nineteen it was clearly defined as either positive or negative, ranging from gains of 30 points to losses of 20 points in SAT math score units. (Statistical differences for verbal test scores were less evident.) Given this result, we also tested whether the re-sorting hypothesis at the institutional-level would be affected by the proximity of a four-year college. We found that community colleges closer to public four-year competitors were more likely to lose students with high test scores after the implementation of FBFS. This finding indicates that incentives generated by the merit aid program made high ability students more likely to switch to a public university if a four-year college was within a reasonable commuting distance, and it confirms the hypothesis that distance is an important predictor for college choice and enrollment (Long, 2004b).

Conclusions

The study reported on here examined the institutional responses to the introduction of the FBFS. Community colleges in Florida increased institutional financial aid for

eligible students after the implementation of the Florida Bright Futures Scholarship program. This response does not support the crowding-out hypothesis, which asserts that colleges are likely to reduce the amount of institutional aid they provide when a new source of financial aid becomes available. One plausible explanation for this state-level finding is that institutions are willing to provide aid to make up any amount of tuition not covered by the merit scholarship program in order to attract high ability students. We found both positive and negative institutional-level effects ranging from an increase in $250 in institutional financial aid per student to a $100 reduction in institutional aid.

We found no support among Florida community colleges for the Bennett hypothesis, which holds that institutions will increase tuition and other fees in order to capture the revenues from a new aid program. We also noted that public institutions have a generally limited amount of freedom to modify their tuition and fees.

We also found no statistical evidence for the re-sorting hypothesis, which posits that the state community college system loses high ability students as a result of the Bright Futures program. However, our findings do confirm the inappropriateness of a state average treatment effect for the change in average test scores at community colleges. Indeed, some institutions gained higher ability students after FBFS was introduced, with a maximum increase of 30 points in average math test scores (SAT units). Other two-year colleges lost higher ability students after the introduction of FBFS, with a maximum decrease of 20 points. Finally, we found that the shift of Florida students away from community colleges as a result of the FBFS program seems to be statistically associated with measures of the level of competition within each college's educational marketplace, such as the distance to the closest public four-year college.

The results of the study suggest that community colleges respond to the economic incentives created by the introduction of a merit aid program by modifying their institutional financial aid policies in unexpected ways. As for students, they modify their college choice decisions after a new source of financial aid becomes available, but the new program appears to affect the behavior of only those students residing in competitive higher education markets. Consequently, policymakers should be aware of the heterogeneity of responses among institutions and students when evaluating the impact of programs like the Florida Bright Futures Scholarship program.

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