

## **ARE STATE NON-NEED, MERIT-BASED SCHOLARSHIP PROGRAMS IMPACTING COLLEGE ENROLLMENT?**

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### **Abstract**

This study examines whether non-need, merit-based scholarship programs are effective in encouraging students to enroll in postsecondary education and, more specifically, attend an in-state college. National residence and migration data from 1992 to 2004 (alternating even years) were used within a fixed effect regression framework. This approach, combined with interaction terms that capture different program implementation periods, is an attempt to enhance the current understanding of scholarship programs on college enrollment. The results suggest that these programs have a significant impact on college enrollment after controlling for state-level factors, but the effect depends on when the program was implemented, who is eligible to receive aid, and how much aid these students are awarded.

## 1. INTRODUCTION

In today's competitive economic environment, individuals have realized that acquiring additional education beyond high school is critical in gaining access to well-paying and stable employment. As a result, first-time, full-time freshmen enrollments in college increased 8 percent between 1992 and 2004.<sup>1</sup> Yet despite the overall increase in college attendance, certain states continue to struggle with persistently low high school graduation and college participation rates, which may leave them at a competitive disadvantage compared with other states. Recognizing the relationship between a strong public higher education system and future economic prosperity (ACSFA 2001; Carnevale and Fry 2001), several state governments have taken steps to encourage their high school graduates to enroll in postsecondary education by establishing non-need, merit-based scholarship programs.<sup>2</sup>

Historically, a high priority among states was to support and expand need-based financial aid programs for undergraduates (Schmidt 2002). However, in the early 1990s, the invention of merit scholarship programs signaled a sudden shift in state public policy—from concentrating on serving the most economically disadvantaged through need-based financial aid to rewarding and alluring high academic achievers through non-need, merit-based financial aid (Heller 2002; Linn 1998; Longanecker 2002; Parsons 1997). Presently, fourteen states have implemented non-need, merit-based scholarship programs. As shown in table 1, they are Alaska, Florida, Georgia, Kentucky, Louisiana, Massachusetts, Michigan, Mississippi, Missouri, Nevada, New Mexico, South Carolina, Tennessee, and West Virginia. The first state to implement a merit scholarship program was Arkansas in 1991, but two years later the state applied an income cap to the scholarship. In 1993, Georgia crafted a state lottery for the specific purpose of funding its new HOPE (Helping Outstanding Pupils Educationally) scholarship program, which is widely acknowledged as the first broad-based scholarship program (Heller 2002). Massachusetts and Tennessee have implemented their programs within the past four years.

These scholarship programs are based only on academic achievement without taking into consideration family financial need or income cap. There are other notable differences, namely: (1) *scholarship amount coverage*, that is, as a lump sum, tuition only, or tuition plus fees; (2) *program eligibility criteria*, determined by academic performance during high school and/or college; (3) *college choice restrictions* control whether the scholarships can be used at public or private institutions, or both; and (4) *enrollment eligibility*, available to either

1. Authors' calculations based on National Center for Education Statistics (NCES) Integrated Postsecondary Data System (IPEDS) first-time, full-time freshmen migration data, 1992 to 2004.
2. In the remainder of the article, "state non-need, merit-based scholarship programs" will be referred to as "state merit scholarship programs."

# ARE MERIT SCHOLARSHIP PROGRAMS IMPACTING COLLEGE ENROLLMENT?

**Table 1.** State Non-need, Merit-Based Scholarship Programs

State	Year Implemented and Funding Source	Eligibility Criteria	Award Amount and Postsecondary Criteria
Alaska Scholars	1998 Land lease and sales	High school class rank	Public: Four years tuition (\$11,000) at one of the University of Alaska system schools Private: No
Florida Bright Futures scholarship	1997 State lottery	GPA and SAT or ACT	Can attend half time Public: Four years tuition + educational allowances Private: Comparable amount based on Florida's public institution tuition
Georgia Helping Outstanding Pupils Educationally scholarship (HOPE)	1993 State lottery	GPA	Can attend half-time Public: Four years tuition and fees + stipend for books Private: \$3,000 per academic year
Kentucky Educational Excellence Scholarship (KEES)	1999 State lottery	GPA and ACT	Public and private: Up to \$1,000 a year at any accredited approved institution for up to four years
Louisiana Tuition Opportunity Program for Students awards (TOPS)	1998 General revenues	GPA and ACT	Public: Up to four years tuition and fees Private: Comparable tuition at a private institution
Massachusetts John and Abigail Adams scholarship program	2004 General revenues	State test (MCAS)	Public: Tuition Private: No
Michigan Michigan merit award	2000 Tobacco settlement	State test (MEAP) <sup>a</sup>	Public and private: \$2,500 scholarship lump sum for in-state approved institutions
Mississippi Eminent Scholars Grant	1996 General revenues	GPA and SAT or ACT	Public and private eligible Mississippi Institution: Four-year scholarship up to \$2,500 per year for tuition, fees, and books
Missouri Bright Flight scholarship	1997 General revenues	SAT or ACT	Public and private: \$2,000 per year for four years
Nevada Millennium scholarship	1999 Tobacco settlement	GPA and state test	Public: Up to \$80 per credit up to \$10,000 or 120 credits Private: \$80 per credit up to \$10,000 or 120 credits at eligible independent institutions
New Mexico Lottery Success scholarship	1997 State lottery	College GPA	Public: Four years tuition and fees Private: No
South Carolina Legislative Incentive for Future Excellence (LIFE)	1998 General revenues and state lottery	GPA, SAT, or ACT, and class rank	Public: Up to \$6,700 per year for four years and book stipend Private: Comparable tuition at eligible private institution
Tennessee Education Lottery scholarship program	2004 State lottery	GPA or SAT/ACT	Public and private: Up to \$4,000 at a four-year and \$2,000 at a two-year institution

Table 1. Continued.

State	Year Implemented and Funding Source	Eligibility Criteria	Award Amount and Postsecondary Criteria
West Virginia Promise scholarship (Providing Real Opportunities for Maximizing In-state Student Excellence)	2002 State lottery and taxes on amusement devises	GPA and SAT or ACT	Public: Four years tuition + mandatory fees Private: Comparable tuition

\*Michigan merit award was increased to \$3,000 in 2005. In 2007, the name changed to the Michigan Promise scholarship, and awardees will receive \$4,000 after successfully completing two years of college (Michigan Government 2006).

Sources: Krueger 2001; Selingo 2001; state Web sites.

full- and part-time students or only those attending full time. In general, all but the second characteristic are examined in this study.<sup>3</sup> Support for these scholarship programs comes from four primary sources: state lotteries, general state revenues, land leases, and the national tobacco settlement fund. The majority of programs cover students' full tuition costs for up to four years at a public, in-state, postsecondary institution, and a few of the states allow students to enroll part time (Farrell 2004a).

Unlike more traditional need-based financial aid, merit scholarship programs invariably target the state's "best and brightest," who are already more likely to attend college without such inducements. So while expanding college enrollment in the aggregate is desirable, from the perspective of state policy makers the primary goal of merit scholarship programs is to improve in-state college attendance.<sup>4</sup> Another objective is to retain the students upon graduation from college. States make this scholarship program investment because they assume that these students, as graduates, will stay and contribute to the economy and help develop a high-quality workforce. This strand of research is conspicuously absent. Thus, to better understand the economic efficiency of these programs, additional research is needed on the production of degrees and the migratory patterns of merit scholarship recipients (Heller 2003). However, as mentioned by Longanecker (2002, p. 35), "State policy makers have only a modest capacity to influence the human capital levels of their population by investing in higher education degree outputs." It should be noted that the

3. There are almost as many program eligibility criteria as there are states that offer merit scholarship programs. Thus it would be difficult to disentangle individual state attendance patterns from the unique program eligibility criteria.

4. Preferably, students would attend one of the state's public institutions, but in some states the scholarships can be used to support enrollment in a private postsecondary institution.

focus of this study is on the proportion of high school graduates who enroll in college—in particular, an in-state college—the following fall semester and not whether students complete a degree and/or stay in the state for employment. These ancillary questions are left for future consideration.

Thus far few studies have analyzed whether states with such merit scholarship programs have experienced improvements in the college enrollment rates and, in particular, whether a greater percentage of high school graduates choose to stay in-state compared with those states that do not offer such merit scholarship programs. This study uses the most recent data available to determine the extent to which these policy goals are being met. Additional tests are conducted to determine whether the amount of aid or various restrictions, such as eligible institutions and enrollment intensity thresholds, have a differential effect on college enrollment. The article unfolds as follows. The next section reviews the recent literature on college-going behaviors and state merit scholarship programs, followed by a discussion of the methodology used in the study. The article concludes with a summary of the major findings, limitations of the analysis, and possible policy implications and next steps.

## **2. LITERATURE REVIEW**

A vast majority of the college financial aid literature points to a variety of economic and social factors as influencing high school graduates' college enrollment and choice patterns. This section begins with summaries of a few notable studies that use human capital for the study's framework and ends with highlights from previous merit scholarship program studies that, while limited in their scope to a single state or group of states, motivate the current study.

### **Financial Aid and College Enrollment**

The relationship between financial aid and enrollment in college is a lot more complex than just looking at tuition. One would assume that financial aid is a discount to the tuition rate, and students should react to the same increase in financial aid or decrease in tuition, which would result in the same net cost to students (Heller 1999). Unfortunately, this is not the typical case for most students. Research consistently has demonstrated that all else being equal, higher levels of costs, resulting from less aid or greater tuition and other costs, tend to reduce the likelihood of a student and family making an investment in higher education and enrolling in college (Becker 1992; Manski and Wise 1983; Paulsen 1998).

Perna and Titus (2004) studied individual data from the third follow-up of the National Education Longitudinal Survey (NELS) and found that state funding policies, such as appropriations for public postsecondary institutions, tuition, and K–12 education, influence the distributions of college

enrollments within a state. A larger gap in the average tuition at public and private postsecondary institutions is associated with an increased likelihood of enrolling in a public four-year institution. In addition, state need-based financial aid programs with relatively large awards per member of the traditional college-age population appear to be particularly effective at promoting enrollment in private four-year institutions within the state.

When states are the unit of analysis, a common finding from the college choice literature is that when tuition increases at public four-year institutions, their enrollments decrease and those at public two-year institutions increase (Kane 1995). In an analysis of High School and Beyond (HS&B) and NELS data, Kane (1999) found that enrollment rates were lower in states with higher than average tuition costs for postsecondary education, especially in states with high two-year institution tuition. However, the decline in public two-year enrollments can be offset through need-based financial aid (Heller 1999; Perna and Titus 2002) and non-need financial aid (St. John et al. 2004).

#### **State Non-need, Merit-Based Scholarship Programs**

Given that most state-sponsored, non-need, merit-based scholarship programs are relatively new, few studies have been conducted on the programs, and the studies thus far have focused on one state or compared a specific state with these scholarship programs to neighboring states without such programs. Eight of the merit scholarship programs are located in states that are members of the Southern Regional Education Board (SREB), where many of the states were experiencing low high school graduation and college participation rates. These states have therefore created a perfect natural experiment to study the effect of merit scholarship programs over time.

For instance, in one of the first studies on state merit scholarship programs, Dynarski (2000) compared Georgia's HOPE scholarship program with a group of southern states that did not offer a merit scholarship program. Using Current Population Survey data, she found that students in Georgia are more likely to attend college in state compared with students in the neighboring states. Specifically, the attendance rates of eighteen- to nineteen-year-olds in Georgia increased between 7 and 8 percentage points from 1989 to 1997. In particular, she found that the Georgia HOPE scholarship had a greater impact on college choice than college access—students were choosing four-year colleges over two-year institutions and two-year institutions over no college at all. The latter result was also found by Cornwell and Mustard (2002), who estimated the effect of Georgia's HOPE program on in-state college enrollment. They found that the number of students enrolling in four-year and private institutions

## 5. CONCLUSION

This study's findings illustrate the complex relationship between financial aid and college enrollment, and the fact that policy makers do not have full control over their states' socio-educational and economic characteristics. First, to answer the policy question posed earlier, the analysis provides evidence that state merit-based scholarship programs are having a positive impact on college enrollment and keeping students in state for college. Over the twelve-year period, in-state college enrollment for states with merit scholarship programs were on average 4.6 percentage points higher than states without such programs. This difference in college in-state enrollment is meaningful because, of the fourteen states that offer merit scholarship programs, seven are located in states where high school graduation and college attendance rates are quite low.

Nevertheless, a few words of caution are needed based on the different dimensions of these state merit scholarship programs. Although such programs meet their stated policy objectives, implementing a merit aid scholarship program will not magically fix all the systemic barriers to college access and in-state enrollment. The findings point to a spike in college and in-state college enrollment when the programs are implemented, but the percentage of college goes flattens out over time, especially for in-state enrollment. Taking into consideration the state merit award amount, college choice restrictions, and enrollment eligibility in the estimates, we begin to understand why in-state enrollment flattens over time despite the significant impact of these programs on college enrollment after controlling for state-level factors.

The first dimension analyzed was the amount of the award by the state. The findings indicate that the largest gains in college enrollment were experienced by states that have provided generous merit award amounts. In general, states offering merit aid amounts in the top quartile—near to full tuition scholarships—experienced a 5.5 percent increase in college participation and a 6.7 percent increase in first-time freshmen staying in state for college. Conversely, states such as Michigan and Missouri that are not as generous as the other merit scholarship states because they do not cover full tuition have not experienced the same gains in college enrollment as some of the other states. The implication of this finding for state policy makers is clear. If the objective of establishing a merit scholarship program is to improve the rate of college enrollment, the evidence suggests that the merit awards need to be substantial in order to improve in-state college enrollment. Within the past few years, a few of the states (e.g., Florida, Kentucky, Louisiana, New Mexico) had to increase funding for the programs because of greater numbers of awardees over time. This finding may therefore discourage certain states from exploring merit-based scholarship programs as a means of

improving economic competitiveness because they may not have the financial resources to support such programs at the level necessary to reap the greatest benefits.

Another dimension of the state programs analyzed was college choice restrictions. Overall, states that allow merit scholarships to be used only at public four- and two-year institutions experienced the largest improvements in college participation. One can argue that these programs should be used only at public institutions because of the funding sources, especially those funded through state general revenues or a state lottery. The states that offer comparable tuition or a set award at private institutions are Florida, Louisiana, Nevada, South Carolina, and West Virginia. Georgia provides a set amount to attend a private institution compared with offering full tuition at public institutions. But when the time-varying aspect and state control variables are factored into the equation, the findings indicate that states will benefit from offering a choice between public or private institutions, especially for keeping the “best and brightest” in state for college. For example, New Mexico restricts the award to public institutions, but there are few choices of public higher education institutions for the “best and brightest.” Initially, New Mexico experienced an increase in in-state enrollment, but over time the students started migrating to out-of-state institutions. In addition, there are few private higher education opportunities in New Mexico for the best and brightest. Lastly, Alaska, Nevada, and New Mexico are members of the Western Interstate Commission on Higher Education (WICHE), and WICHE states offer opportunities for students in these states to attend colleges in other member states. This could also be the case for the high migration of Alaska students.

Enrollment eligibility was also studied, and the evidence suggests that allowing student awardees to enroll part time in college is beneficial. The argument can be made that allowing students to enroll part time is increasing access to college for many students. On the other hand, one can argue that this is not financially beneficial for the state because it prolongs the time in college, thereby increasing the likelihood that a student will drop out prior to attaining a degree.

The goal of this research study was to provide evidence-based results that could help policy makers and researchers understand the impact of merit-based scholarship programs on college enrollment. While it accomplishes this policy objective, states also need to consider other factors, such as the strength of the state’s higher education and K–12 system and economic growth, state need-based financial aid, and state funding formulas for higher education institutions. For example, states need to consider need-based aid, which can have an impact upon high-achieving students who are from lower socioeconomic families enrolling in college. The fourteen states that have merit scholarship



programs, on average, have not increased their need-based funding. As a result, the study's findings illustrate the complexity of these state merit scholarship programs, including how K–12 and higher education funding and state policy are intertwined.

Future research by the authors includes developing an event history model to analyze whether there are significant time-since-implementation effects of merit scholarship programs on college enrollment. Implementation effects will include changes to the merit scholarship program policy, funding, and scholarship amounts. In addition, longitudinal studies on the current fourteen-state merit scholarship programs need to continue, as does research on individual changes to enrollment and financial aid policies at institutions within these merit scholarship states.

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