Financial Aid in Mississippi

How three state-funded programs affect college enrollment and degree attainment

Report prepared for the Mississippi Office of Student Financial Aid
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Executive Summary

In the mid-1990s Mississippi's Legislature established three state-funded financial aid programs to support recent graduates of Mississippi high schools. Each of these programs—the Mississippi Eminent Scholars Grant (MESG), the Higher Education Legislative Plan Grant (HELP) and the Mississippi Resident Tuition Assistant Grant (MTAG)—provides aid to students who meet certain ACT and high school GPA requirements and attend two- or four-year colleges in Mississippi.

The legislature created the aid programs with the goal of increasing college enrollment and degree attainment among the state's high school graduates. Determining the effects of financial aid programs is particularly important in Mississippi, where bachelor's degree attainment registers well below the national average. In 2013, 20 percent of Mississippi adults held a bachelor's degree compared to 29 percent nationally.[i] Many students in the state grow up in households with limited financial means to send children to college—32 percent of Mississippi's children grow up in poverty—and postsecondary tuition is on the rise.[ii] Given the limited resources of state households and the state's higher education system, Mississippi continues to search for policy solutions that raise educational attainment.

At the request of the Mississippi Office of Student Financial Aid (OSFA), I estimate the impact of these financial aid programs on students' college enrollment choices and degree completion rates. To do so, I use a technique called Regression Discontinuity Design (RDD) that allows me to compare students receiving aid with similar students who do not receive aid. Specifically, I compare the college enrollment and degree completion of students who scored just above and just below the ACT eligibility threshold for each program. Differing only in their eligibility for financial aid, these two groups of students are nearly identical in terms of academic skill and other characteristics. The analysis includes students who graduated from high school between 2004 and 2008 and is the first rigorous evaluation of these financial aid programs to date. Below is a brief description of each program's requirements, aid amounts and impacts on college enrollment and degree completion.

Mississippi Eminent Scholars Grant

Core Requirements: *ACT score of at least 29, HS GPA of at least 3.5, full-time enrollment in a public in-state college*
Award: *$2,500 per academic year*

- Students eligible for MESG are 10 percentage points more likely to enroll in a state four-year college.
  - Two-thirds of the increase in four-year college enrollment comes from students who would have otherwise attended an in-state two-year college but switch to an in-state four-year college.
  - One-third of the increase comes from students who would not have attended an in-state college at all.
- Students eligible for MESG are 4 percentage points more likely to receive a bachelor's degree from a Mississippi college within six years of high school graduation.
- Mississippi awards $134,500 in MESG funds for each additional bachelor's degree earned because of the program.

Mississippi Resident Tuition Assistance Grant

Core Requirements: ACT score of at least 15, HS GPA of at least 2.5, full-time enrollment in a public in-state college
Award: $500 per academic year in years 1 & 2; $1,000 per academic year in years 3 & 4

- Students eligible for MTAG are 6 percentage points more likely to enroll in a state four-year college.
- Students eligible for MTAG are not significantly more likely to enroll in a two-year college.
- Students eligible for MTAG are 1 percentage point more likely to receive a bachelor's degree from a Mississippi college within six years of high school graduation.
- Mississippi awards $18,140 in MTAG funds per additional bachelor's degree earned because of the program.

Higher Education Legislative Plan Grant

Core Requirements: ACT score of at least 20, HS GPA of at least 2.5, Family income < $36,500 plus $5,000 for each additional dependent, full-time enrollment in any in-state college.
Award: Full tuition and fees at public college or equivalent for private, non-profit college

- Fewer than 2 percent of students with eligible ACT scores and GPAs applied for and received HELP.
- 79 percent of HELP recipients enroll in four-year college and 21 percent enroll in two-year college.
- Estimating the impact of HELP on enrollment and degree completion is difficult given how few potentially eligible students receive the grant.

The results suggest that MESG and MTAG both raise the number of Mississippi high school graduates enrolling in four-year colleges within the state. Neither MTAG nor MESG significantly boosts enrollment in two-year colleges. Although MESG was initially designed to entice students with high academic achievement to stay in Mississippi for college, a large portion of the funds appear to flow to students deciding between Mississippi's four-year and two-year colleges, not between in- and out-of-state schools. This could suggest that affordability between two- and four-year colleges is an important consideration for students barely eligible for MESG.

Finally, MESG does raise the rate at which students attain a bachelor's degree in Mississippi. Data limitations prevent me from determining whether such students would otherwise have failed to earn such a degree or would have simply done so out of state. As a result, it is currently impossible to determine whether such aid changes students' overall degree completion rates. OSFA is currently working with the National Student Clearinghouse to obtain data tracking Mississippi high school students enrolling in college outside of the state, and this analysis will soon be possible.

Recommendations

1) Leadership in OSFA, universities and the state legislature should review the effects of MESG and MTAG described here to determine if the programs meet the State of Mississippi's goals.

2) OSFA should work to improve outreach to students, families and high schools regarding the HELP application process and available aid amounts.

3) OSFA should incorporate National Student Clearinghouse data into this analysis to better measure the extent to which financial aid changes students' decisions to leave the state for college.

Introduction

In 1965, President Johnson signed the Higher Education Act (HEA) into law. The HEA would form the pillars of federal financial aid, including Pell Grants, Work Study programs and Stafford Loans.[iii] Since that time our nation's higher education systems have changed drastically. Postsecondary education is increasingly important for both economic security and job stability.[iv] More students pursue higher education, and states have implemented their own financial aid programs to support college-going residents.[v] At the same time after adjusting for inflation, the average tuition of a public four-year college in the United States has nearly tripled in the last thirty-five years from $2,300 to $6,500.[vi] Additionally, housing, meals and other student expenses combine for a cost of college that far exceeds tuition.

The following pages provide an overview and analysis of three state-funded financial aid programs created by the Mississippi Legislature in the mid-1990s—the Mississippi Eminent Scholars Grant (MESG), the Mississippi Resident Tuition Assistance Grant (MTAG), and the Higher Education Legislative Plan (HELP) grant. Through a regression discontinuity approach, I analyze student academic outcomes associated with receiving the three grants. Data to conduct the analysis was supplied by the Mississippi Office of Student Financial Aid—a division of the Mississippi Institutions of Higher Learning. The Office of Student Financial Aid (OSFA) provided data on students graduating from a Mississippi high school between the spring of 2004 to the spring of 2013 to conduct the analysis.

Higher Education Trends in Mississippi

Mississippi's higher education system has experienced cost and enrollment trends similar to the nation overall. In 1965, the state's nine public universities enrolled 23,378 undergraduates.[vii,1] By 2013, those universities enrolled 80,300 students, and community colleges enrolled another 72,628 students. Private non-profit colleges added 16,011 students to the state's overall college enrollment.[viii]

Despite similarities to national enrollment trends, the state has one of the lowest rates of postsecondary degree attainment. In 2013, 20.2 percent of Mississippi's residents over age 25 held at least a bachelor's degree while 8.4 percent held an associate degree.[ix] While this is an increase from 2000, in which only 16.9 percent of Mississippians held a bachelor's degree, the state's rate of postsecondary degree attainment is not rising fast enough to make up the difference between other states and the nation overall.

In many states, the late 2000s created a particularly challenging financial environment for colleges, universities and the state leaders charged with maintaining both systems. In Mississippi at that time,

[1] Includes University of Mississippi Medical Center.

rising enrollments and tight state budgets left colleges in need of more resources at a time when fewer state dollars were available. In 2013, state appropriations made up 39.9 percent of community and junior college revenues—down substantially from the 55 percent of revenue covered in 2001.[x,xi] The university system reported that, in 2014, 14 percent of its funds came through state appropriations, and the remainder was self-generated.[xii]

Tuition at Mississippi universities has risen to compensate for rising costs of education and the falling share of state funds. In FY2015, average tuition and fees at Mississippi universities measured $6,411—up by $1,276 (20 percent) since 2010 after adjusting for inflation.[xiii] *Table 1* details tuition and fees at each Mississippi public university. The table also provides total tuition with room and board. In fall 2015, universities will further raise their tuitions between 2.5 and 5 percent.[xiv] Average tuition at Mississippi community colleges is also on the rise. In FY2015, average tuition measured $2,476—up 34 percent from 2010 after adjusting for inflation.[xv]

Table 1. **Tuition, Room and Board: Mississippi Public Universities, 2014**

	Alcorn State	Delta State	Jackson State	Mississippi State	University for Women	Valley State	University of Mississippi	Southern Mississippi
In-state tuition	$6,108	$6,012	$6,348	$6,672	$5,640	$5,640	$6,660	$6,744
In-state room, board, and tuition	$13,912	$12,690	$13,865	$14,778	$11,908	$12,988	$15,099	$14,259

Source: Mississippi Institutions of Higher Learning. Office of Strategic Data Management.

Overview the Project and the Mississippi Office of Student Financial Aid

Mississippi's Office of Student Financial Aid tracks applications and awards for a host of state grant and loan programs. OSFA processes state-funded grant and loan applications and receives ACT score reports, high school GPA reports and FAFSA data on Mississippi high school students. OSFA also tracks satisfactory academic progress for university and community college students to determine ongoing state scholarship eligibility. The combination of data housed by OSFA brought about the opportunity to review the MESG, MTAG and HELP programs.

OSFA determined several existing questions to explore on the three aid programs if its records allowed for it. The OSFA is particularly mindful that the Mississippi Legislature may make a shift to more performance-based budgeting. Its hope was that this review would give the office the ability to report student outcomes associated with each of the three programs to the legislature, IHL Board, and state and university leadership. It also hoped the analysis would determine if the programs were meeting the state's intended goals of supporting students on a path to college enrollment and a degree.

Through discussions with OSFA, it was agreed that I would review the offices' data to determine if and how Mississippi can adjust the grant programs to better achieve the stated goals of increasing college success and keeping talented students in state. The following sub-questions would be examined to the extent possible given the existing data provided by OSFA:

1. **For the MESG, HELP and MTAG programs, how does receiving each grant affect a student's likelihood of initial enrollment in higher education, continued enrollment, and college completion relative to similar students not receiving the financial aid?**

2. **Does receipt of MESG impact—as the program intends— a student's decision to initially attend and remain in Mississippi for college?**

3. **How does the HELP grant shape the enrollment decisions and college completion of low-income students? Do the results parallel national evidence that financial aid is of greater value to low-income students?**

4. **If there are barriers to answering any of the above questions given existing data, what can be done by the OSFA to collect information, so that an analysis is possible in the future?**

To answer these questions, I reviewed the office's existing data on Mississippi high school students graduating between the spring of 2004 and spring of 2013. I employ a regression discontinuity approach (described below) using ACT score cutoffs specified in the eligibility of the three grant programs to review outcomes associated with receiving any one of the three grants.

Review of Research on Financial Aid

Without a doubt, price is an important factor for students considering whether and where to pursue higher education.[xvi] Researchers have tried to determine how the receipt of financial aid shapes enrollment decisions of students. This review of Mississippi financial aid programs with very distinct award amounts and eligibility thresholds has the potential to contribute to the larger research literature on the effects of financial aid. The bulk of studies on the effect of financial aid estimates that $1,000 in student aid increases the likelihood that a student will enroll in college by 3 to 4 percentage points.[xvii] In general, previous research also indicates that programs with clear, simple thresholds have a larger effect on student enrollment[xviii] and that low-income students are more responsive to aid and the price of college than their higher-income counterparts.[xix]

Susan Dynarski (2003) used the elimination of the 1982 Social Security Student Benefit Program (SSSBP) to review how students receiving SSSBP changed college enrollment decisions after the program ended.[xx] The SSSBP awarded an average of $6,700 per student annually—a much more substantial amount than the average Pell Grant at the time ($2,000). Dynarski found that the cuts to the SSSBP reduced college attendance probabilities by more than a third. This was equal to a 3.6 percentage point decrease in college attendance for each $1,000 in grant aid eliminated.

Dynarski (2000) also reviewed Georgia's Hope Scholarship—a merit-based scholarship for college-going Georgia high school graduates—and found that the program increased college enrollment by 7 percentage points.[xxi] Given the value of the Hope Scholarship to students, this equates to approximately a 2- to 3-percentage-point increase in enrollment per $1,000 of scholarship.

Thomas Kane (2003) used regression discontinuity design to review how two financial aid programs in California—Cal Grant A and Cal Grant B—shaped student college enrollment.[xxii] Students had to meet GPA and income limits that were not published prior to application, because they were determined based on the volume of students applying each year. Cal Grant A either covered in-state tuition at all public universities in California for four years or subsidized California private school tuition by about $9,000 annually for students. Kane determined that Cal Grant A eligibility raised the proportion of financial aid applicants enrolling in a California university by three to four percentage points. Overall, the research indicated that scholarships caused college enrollment to rise by 1.2 percentage points for each $1,000 in Cal Grant aid available—slightly lower than what the bulk of studies indicate on financial aid effects.

A more recent analysis by Benjamin Castleman and Bridget Long indicated that Florida's Student Access Grant (FSAG) raised student enrollment at Florida universities by 3.2 percentage points for each $1,300 invested (in 2000 dollars).[xxiii] At the time of the study, the FSAG grant was sufficient to cover 57 percent of average tuition at a public Florida university. A student could pair his or her aid with a Pell Grant to cover the bulk of college costs and was eligible to continue to receive the grant as long as he or she maintained a 2.0 GPA while enrolled at a university.

A study by Joshua Goodman and Sarah Cohodes (2014) of Massachusetts' Adams Scholarship—a merit scholarship designed to encourage high achieving Massachusetts high school graduates to remain in state for college—found the scholarship program produced mixed outcomes.[xxiv] The scholarship added about 1,000 students to the enrollment rolls of Massachusetts colleges, but "the marginal student lowered their college completion rates by using the scholarship." Goodman and Cohodes assert that the scholarships encouraged students to attend colleges with lower graduation rates than they would have otherwise, and, as a result, the likelihood of graduation fell for some of these high achieving scholarship students.

There is also a growing body of research to determine if both merit- and need-based financial aid programs can shape not just a student's likelihood of enrolling in college but also his or her college persistence and graduation rates.[xxv] Judith Scott-Clayton (2011) extensively reviewed the effects of the PROMISE scholarship in West Virginia—a state with a bachelor's degree attainment rate similar to that of Mississippi.[xxvi] Since 2002, any West Virginia student with a 3.0 GPA in high school and a 21 on the ACT has been eligible for a full tuition scholarship at a public community college or university—or a scholarship of an equivalent amount to a private university in the state. Recipients must complete 30 credit hours per year and maintain a 3.0 GPA to maintain the scholarship.

Scott-Clayton found that "total credits increase by 2.1 after the first year (equivalent to one-half to two-thirds of a course)," and recipient student GPAs increased by 0.16 at the end of the first semester when compared to very similar non-scholarship students.[xxvii] Overall, scholarship recipients were 9.4 percentage points more likely to complete their bachelor's degree in four years. The results indicate that that the ongoing academic thresholds during college that are set for West Virginian students—both GPA and credit attainment—have a strong motivating influence. Scott-Clayton notes that "cost of college effects" and "incentive effects" may be at work in accomplishing the goals of the scholarship program.

Previously mentioned studies on enrollment and financial aid receipt also tested longer-term academic outcomes associated with financial aid. Dynarski's (2003) study of the Social Security Student Benefit Program found that a student receiving the benefit completed a semester more of schooling and was 14.5 percentage points more likely to complete his or her first year of school. That said, neither value was statistically significant in Dynarski's results.[xxviii]

A limited number of other papers review outcomes of students for both merit- and need-based aid with mixed results. Some studies show increased rates of completion while others show little effect or even an increased time to degree.[xxix] My hope is that the examination of Mississippi's programs adds to the available results on the longer-term outcomes of students receiving varying degrees of financial aid.

Review of Mississippi Financial Aid Programs

All three financial aid programs featured in this report are intended for recent high school graduates pursuing higher education full-time in the state. Two of these programs—MESG and MTAG—are merit-based programs enacted by the legislature during the 1995 Regular Session in SB 2172.[xxx]

The third program—HELP—was instituted during the 1997 Regular Legislative Session through SB2231 to "provide tuition to all needy, qualified, college-bound state residents."[xxxi] HELP awards tuition assistance to students that meet a combination of income and academic thresholds (detailed below).

Table 2 reports spending and award counts for each of the three programs in FY2013-2014. In total, Mississippi spent $23.9 million across the three programs. MTAG is the largest of the three programs in terms of student recipients and funds distributed. In the 2013–2014 academic year, 23,481 students received MTAG for a total cost of $13.88 million. A much smaller amount—918—received support through HELP. The number of HELP recipients has more than tripled in the last three years. In 2010–2011, 289 students received a HELP grant.[xxxii]

Table 2. **Recipients and Spending by Financial Aid Program, FY2014**

Program	FY2014 Recipients	FY2014 Funds
MS Eminent Scholars Grant	2,189	$5,212,308
MS Resident Tuition Assistance Grant	23,481	$13,880,728
Higher Education Legislative Plan	918	$4,852,533

Mississippi Eminent Scholars Grant

The Mississippi Eminent Scholars Grant is a merit-based financial aid program with academic thresholds higher than both MTAG and HELP. Students must attain a high school GPA of 3.5 out of 4.0 and be Mississippi residents for one year before graduating from high school. Students must receive a score of at least 29 on the ACT *or* be a National Merit or National Achievement Finalist or Semi-Finalist (though it is rare to be a finalist without a 29 on the ACT). In addition, students must enroll full-time at their chosen two- or four-year colleges. Students must maintain a 3.5 cumulative GPA and remain enrolled full-time to continue receiving MESG. Applications are due on September 15th of each academic year.

MESG recipients are eligible for $2,500 in aid to attend an in-state, public college. Mississippi law specifies that students may keep the excess of the award even if the aid exceeds the cost of attendance as determined by the postsecondary institution.

Mississippi Resident Tuition Assistance Grant

The Mississippi Resident Tuition Assistance Grant—the largest of the state's award programs—is available to all applying students with a 15 on the ACT, a 2.5 high school GPA and Mississippi residency. Like other programs, students must enroll full-time and maintain a 2.5 GPA to remain eligible for the scholarship. Students must be pursuing their first certificate or degree at a two-year or four-year public institution in the state.

Applications for MTAG are due on September 15th of each year. Eligible students receive $500 per year toward tuition during their first and second years of postsecondary enrollment and $1,000 per year during their third and fourth years. Students can receive both MTAG and MESG, but if the combination of the awards with other aid exceeds the cost of attendance, the MTAG award is refunded to the state. While MTAG has no income criteria, students receiving a full Pell Grant are not eligible to receive MTAG. MTAG requires students to complete a Free Application for Student Financial Aid (FAFSA) to determine their Pell Grant eligibility.

Higher Education Legislative Plan Grant

The Higher Education Legislative Plan Grant is the only state grant program included in this study with both academic and income thresholds for eligibility. HELP "is designed to provide tuition assistance to qualified students whose financial need, as demonstrated by federal student aid eligibility, will not be met with gift aid from other sources."[xxiii] Applications for HELP have the earliest deadline of the three programs—March 31st—before the student starts classes in the fall.

Students must be residents of Mississippi and must be pursuing a first certificate, associate or bachelor's degree. They must also enroll full-time. Students need a 20 on the ACT and a high school GPA of 2.5. A Mississippi high school student without a 2.5 GPA may apply for the HELP grant as a freshman in college after establishing a 2.5 in his or her first year, provided he or she scored a 20 on the ACT and meets the income threshold.

Today, students have to fill out and submit a FAFSA and be from a family with income less than $39,500 annually (plus an additional $5,000 income allowance for each additional dependent in the family). When the program was first instituted in 1997, the income cap was $30,000; however, the family income cap was raised to $36,500 in 1999. Finally, students must also complete a predetermined core curriculum in high school for a total of 17.5 units of coursework, including an art and advanced elective. Students must renew their awards each academic year and maintain a 2.5 GPA while in college.

The HELP grant provides students with tuition and required fees at a public Mississippi two- or four-year college. The grant will also award an equivalent amount to students attending an in-state private university for tuition and fees. Students can receive the award for 5 academic years.

Process of Applying for Aid in Mississippi

Beginning January 1 of each year, students can submit a universal online application for state financial aid to the Office of Student Financial Aid at http://riseupms.com/state-aid/. Students fill out an online form to confirm that they are full-time students with Mississippi residency who are considering a degree at an eligible college or university in the state for the first time. The form also asks additional questions to determine potential eligibility for the HELP grant by screening for income and household size.

Students' ACT scores and high school GPAs are independently sent to the OSFA and matched with the identification information supplied by the student. Submitting one online form allows the student to be automatically considered for MTAG and MESG; however, because income verification and household size are needed to determine HELP eligibility, additional forms are requested before eligibility for HELP can be determined.

After submitting the general online application, students are given PIN and login information via email where they can submit additional materials, see their application status, or change their intended college. Students missing any materials for award determination are emailed weekly to notify them that more information is needed.

Students may apply for the first time for MTAG funding during any of their four years of college. In contrast, students can only apply for MESG immediately after graduating from high school (as of 2015, students with less than 36 hours of college credit can apply for MESG if they meet the required thresholds). Students may apply for HELP grants before their first or second years of college.

Recent Changes in Mississippi's Financial Aid Programs

The OSFA has also regularly discussed updating the income thresholds for the HELP grant to account for inflation over time. The $36,500 threshold was last raised in 1999—15 years ago. During the 2014 Mississippi Legislative Session, Senate Bill 2499 raised the starting family income cap to $39,500 beginning in AY2015-16 and to $42,500 beginning in AY2016-2017.[xxxiv] Changes were also made to simplify the documents HELP recipients submit to verify residency and income.

The OSFA also recommended that MESG awards be capped at the cost of attendance for each student (an official amount pre-determined by a university or college), but the Mississippi House rejected the provision in 2014.

The OSFA suggested that the current exclusion for MTAG awards to students receiving a full Pell Grant also be removed; however, an analysis of that policy change indicated that the increase in MTAG awards from removing the exclusions would cost the state $28 million annually which the Mississippi Senate and House determined was too high. The OSFA notes that the state's financial aid programs were already underfunded for academic year 2015.[xxxv]

Description of Office of Student Financial Aid Data

OSFA's role in determining satisfactory academic progress and financial aid eligibility makes it a hub for key academic data on Mississippi's high school graduates. To conduct the analysis, OSFA provided data both on Mississippi high school students who applied for one of the three aid programs and on those who did not. The dataset included students enrolling in both two-year community colleges and four-year universities. Students in the sample are those who had high school graduation dates from spring 2004 to spring 2013.

A total of 323,966 unique student entries are included in the OSFA files. Data includes high school GPA, ACT score and county of residence— as well as the status of college enrollment, college credit attainment and degree completion. Data on the race, gender and family income of students completing a financial aid application is mostly complete, but similar demographic data is less complete for students that do not complete an aid application with the state. For example, approximately 20–25 percent of students are missing codes for race or gender.

One key limitation of the data provided by OSFA is that it only tracks college enrollment of Mississippi high school graduates that also enroll in the state for college. The data does not track students that enroll in college outside the state of Mississippi. As a result, students in our sample that are labeled as not enrolled in a Mississippi college could be (1) enrolled in college in another state or (2) not enrolled in college at all, and the data does not allow for distinguishing those two groups.

To combat this deficiency, the OSFA is working with the National Student Clearinghouse (NSC) to request college enrollment data on Mississippi students that enroll in out-of-state colleges. A follow-up version of this report will include a more robust comparison of students that enroll inside and outside the state of Mississippi for college and will allow for a comparison of outcomes of scholarship recipients to similar students that enroll outside of the state for college.

About Regression Discontinuity Design

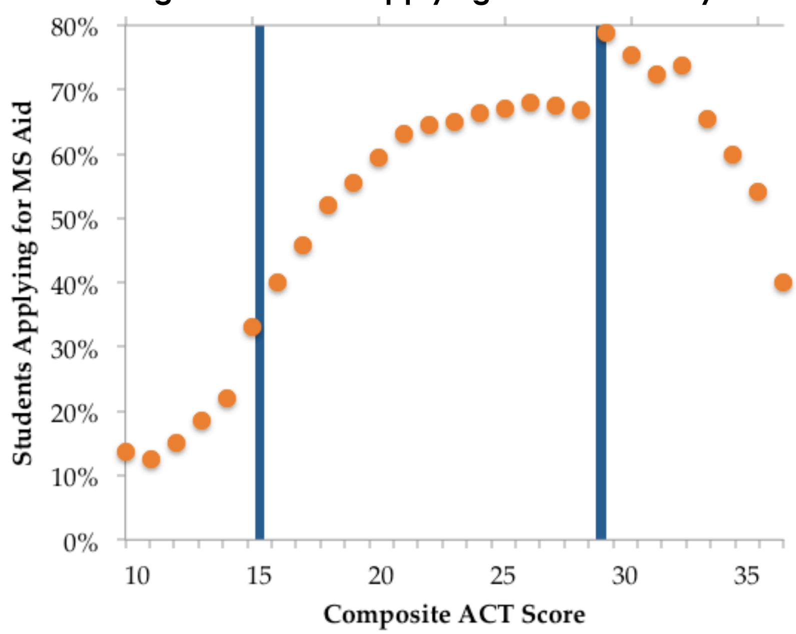
There are several different paths to determining the effects of a financial program on college enrollment and degree attainment. Here, I use a statistical approach called Regression Discontinuity Design (RDD). RDD compares academic outcomes of students just above and below an eligibility threshold for a program—in this case the ACT score cutoff. The assumption is that students just barely eligible for the program are similar in all other ways to those that just barely miss the cutoff. Given this assumption, the only difference in these students' outcomes would be attributable to the aid program itself. RDD allows for an analysis of the magnitude of those differences and details if they are statistically significant. For example, I will look at the effects of MESG by comparing the average outcomes of students with a 29 on the ACT to students with a 28 on the ACT, because MESG eligibility begins at the ACT score of 29. It is important to note here that RDD results most directly apply to those students nearest to the cutoff score, and the descriptions below will reflect that distinction. The effect of each program may vary for students further away from the eligibility threshold.

Preliminary Analysis of Mississippi Eminent Scholars Grant

In this section, I provide descriptive information about students receiving the Mississippi Emininent Scholars Grant. Of the three grant programs evaluated, MESG has the most rigorous academic standards. Students attaining the ACT cutoff score of 29 register in the 97th percentile of Mississippi ACT test takers.[xxxvi] In addition to a 29 on the ACT, students also need a high school GPA of 3.5. In practice, however, the ACT threshold is what keeps students from MESG eligibility most frequently. Among the high school graduates in our sample, 2 percent received MESG funds for at least one year.

Figure 1 demonstrates the percentage of students—arranged by their ACT scores—applying for financial aid. The figure shows clear jumps in the percentage of students applying at the ACT scores of 29 and 15—the MESG and MTAG cutoff scores. This graphic validates that students are aware of the cutoffs and are more likely to apply for aid once they reach the 15 and 29 ACT thresholds.

Figure 1. **Percentage of Students Applying for State Aid by ACT Score**



Given that students are eligible for MESG, how many actually receive the award in their first year after high school? The answer to this question varies by ACT score. At the cutoff score of 29 on the ACT, 77 percent of eligible students take the MESG award—a high rate of acceptance. The portion of students applying for and accepting the award then decreases as ACT scores rise (*see Table 3*) presumably because an increasing number of these students enroll in colleges outside of the state. Unfortunately, we cannot know this for sure without National Student Clearinghouse data on college enrollment outside of Mississippi.

Table 3. **Students Receiving MESG One Year After High School by ACT Score**

ACT Score	29	30	31	32	33	34	35	36
% With MESG	77%	71%	67%	67%	60%	58%	49%	29%

A large portion of those receiving MESG funds (95.4 percent) attended four-year colleges in the state while the remainder attended two-year colleges. Ninety-two percent of recipients are white, and 2 percent are African American. Fifty percent of students who receive MESG for at least one year are female.

Table 4 details the number of years students receive MESG. Forty-three percent of MESG recipients collected the award all four years. A smaller portion (36 percent) received the award for just one year, and 19 percent of the sample received the award for two or three years. The data in *Table 4* suggests that the majority of MESG award winners either do not re-apply for aid all four years (because of academic ineligibility or not needing the aid) or do not remain enrolled in Mississippi colleges where they would be eligible for the award.

Table 4. **Number of Years Receiving MESG Funds for Year 1 MESG Recipients**

	1 Year	2 Years	3 Years	4 Years
Number of Recipients	1,916	438	550	2,261
Portion of Recipients	36.1 %	8.2%	10.4%	42.6%

*Note: Sample excludes classes 2011, 2012 and 2013 because 4 years of data not yet available.
2.8% of students in the sample received MESG for 5 years.

Table 5 indicates that of those students that receive MESG funds the fall after high school graduation, 75.9 percent are still enrolled in a Mississippi college while 24.1 percent are not enrolled. Those not enrolled in Mississippi could either be enrolled in a college outside of the state or not enrolled in any college. These trends help determine that a good portion of students not receiving MESG funds for four years continue to enroll in Mississippi colleges even without MESG support.

Table 5. **Summary of Students Receiving MESG in Year 1 and College Enrollment in Year 4**

	Enrolled in MS University in Year 4	Not Enrolled in MS University in Year 4
Number of Recipients	3,893	1,238
Percentage of Recipients	75.9%	24.1%

Regression Discontinuity Analysis of MESG

In this section, I detail regression discontinuity design (RDD) results on how MESG eligbility shapes college outcomes for Mississippi's students. For those interested in further examination, *Appendix I* provides graphics that depict academic outcomes by ACT score along with detailed regression results. RDD compares students just above and below MESG's eligibility threshold. RDD determines if there are significant differences in enrollment and academic persistence attributable to the MESG eligibility for Mississippi students. The effect of MESG eligibility on two- and four-year college enrollment and degree completion are detailed below.

Four-Year and Two-Year College Enrollment: *Table 6* summarizes the effect of MESG eligibility for students close to the cutoff ACT score of 29. The RDD results clearly indicate that MESG significantly increases student enrollment in Mississippi's four-year colleges. Students near the cutoff score who receive MESG are 9.8 percentage points more likely to enroll in a Mississippi four-year college than similar students not receiving the aid. The results also indicate that receiving MESG decreases the likelihood that Mississippi students enroll in two-year colleges in the state, because students are deciding to enroll in four-year colleges with the funds. MESG decreases enrollment in two-year colleges by 6.2 percentage points. A substantial portion of Mississippi students decide to enroll in four-year colleges rather than two-year colleges in the state because of the $2,500 in aid received through MESG.

Overall Postsecondary Enrollment*:* Even with the decrease in two-year college enrollment, overall enrollment in Mississippi postsecondary education still rises in the state. RDD results clearly indicate that Mississippi college enrollment for eligible students rises by 3.4 percentage points because of MESG funds. This suggests that MESG is accomplishing the goal of enrolling more Mississippi students in postsecondary education in the state. However, without additional data from the National Student Clearinghouse, it is unclear how much of the increased enrollment comes from students who otherwise would have attended college outside of the state or who would have not attended college at all.

Degree Attainment: Results also indicate that MESG increases the likelihood recipients will receive a bachelor's degree from a Mississippi college within six years of high school graduation. Students who receive MESG and are near the cutoff score are 4 percentage points more likely to receive a bachelor's degree than similar non-MESG counterparts. Approximately 36 percent of similar students with an ACT score of 28 received a bachelor's degree within 6 years of high school. As expected, the likelihood that MESG recipients receive an associate degree within six years falls by 2 percentage points following decreased enrollment in two-year colleges by students receiving the grant.

Table 6. **Effects of MESG Eligibility on Postsecondary Outcomes**

	Any MS College Year 1	Two-Year College Year 1	Four-Year College Year 1	Associate Degree in Year 6	Bachelor's Degree in Year 6
Effect of MESG Eligibility	+ 3.4** percentage points	- 6.2** percentage points	+ 9.8** percentage points	- 2.0* percentage points	+ 4.0* percentage points
Average for Students Scoring 28 on ACT	80%	20%	59%	9%	36%

Note: * Indicates statistically significant at 5% level. ** Indicates Statistically significant at 1% level.
Results best reflect the effect of MESG receipt for students closest to the ACT cut score of 29.
These results reflect scaled RDD results at a bandwidth of -5,5 using MESG eligibility as an IV for MESG receipt.

For a different way of reviewing MESG, one can also look at graphics to see if there are jumps in an outcome—like college enrollment or degree attainment—at the MESG eligibility threshold. *Figure 2* shows the bump in four-year college enrollment at the ACT cutoff score of 29 for the MESG program. *Figure 3* demonstrates a similar, but smaller, bump in bachelor's degree attainment at the cutoff.

Figure 2. **Portion of Students Enrolled in MS 4-Year Colleges in Year 1 by ACT Score**

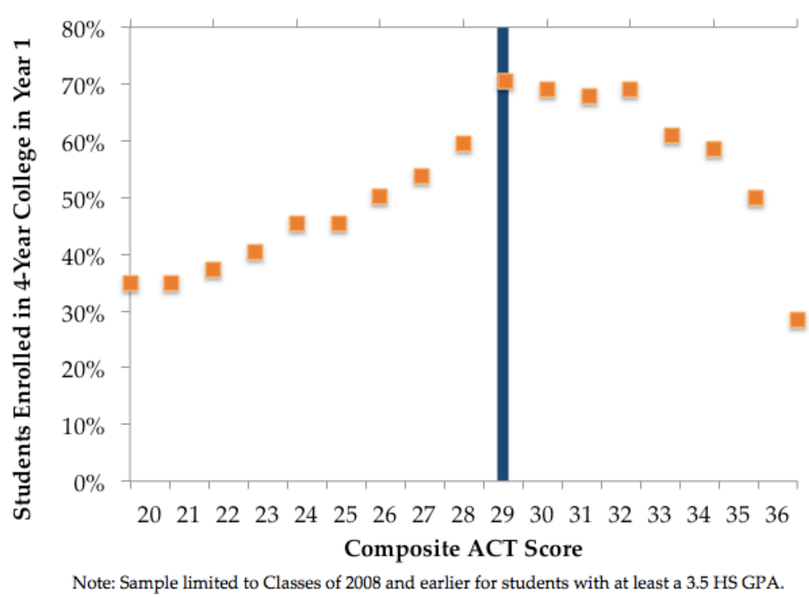
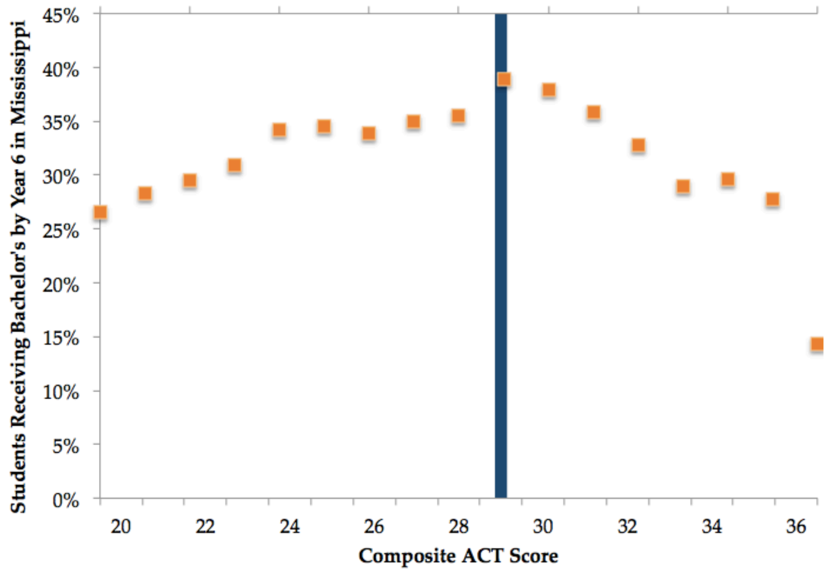


Figure 3. **Portion of Students Receiving a Bachelor's Degree in Mississippi by Year 6**



Note: Sample limited to Classes of 2008 and earlier for students with at least a 3.5 HS GPA.

Mississippi MESG Spending Per Degree: On average, Mississippi distributes $5,352 in MESG funds to students who meet eligibility criteria for the program over the course of their college careers. This investment increases bachelor's degree attainment by 4 percentage points. Taken together, Mississippi awards $134,500 in MESG funds per bachelor's degree earned at a Mississippi institution.[2] The high cost per degree comes, in part, because a large portion of students receiving MESG funds would have attended a Mississippi institution and received a bachelor's degree even without the MESG support. Determining the return on MESG funds requires that OSFA and IHL to consider the potential economic and social benefit to Mississippi of increasing bachelor's degree holders—comparing potential tax benefit to the state over their lifetimes to the investment of aid awarded to produce each extra degree.

MESG Effects by Zip Code Income: To test whether the effect of MESG eligibility varies by the income status of families, I averaged parent adjusted gross income by zip code to determine if students grew up in a zip code that has above- or below-average income for Mississippi. One might predict that the effect of aid varies depending on the income status of families, so I used this average income measure by zip code as an estimate of an individual student's income. *Table 7* reports the effects of MESG eligibility for students who live in zip codes with above- and below-average income during high school. Average income for the sample overall is $43,800.

The results tell us that MESG eligibility does affect patterns in student enrollment differently for students in low- and high-income zip codes. These results suggest that, for students in lower income

[2] Cost calculation: $5,404.12 / 0.0401679 = $134,538 per degree.

zip codes, MESG is more likely to influence the choice between two- and four-year college in Mississippi—rather than the choice between an in- or out-of-state college. Students from zip codes with below-average income are 6.7 percentage points more likely to enroll in a four-year college and 5.2 percentage points less likely to enroll in a two-year college. These students are also significantly more likely to earn a bachelor's degree in Mississippi. Students from lower income zip codes are 5.9 percentage points more likely to receive a bachelor's degree than similar students non-eligible students.

For students living in zip codes with above-average incomes, MESG significantly raises the likelihood they enroll in postsecondary education in Mississippi. These students are 10.9 percentage points more likely to enroll in a four-year college, while being 6.4 percentages points less likely to enroll in a Mississippi two-year college. Overall, MESG raises the likelihood of Mississippi postsecondary enrollment by 4 percentage points for these students relative to similar students not eligible for MESG. These students are also more likely to receive a bachelor's degree in Mississippi. Eligibility raises bachelor's degree attainment by a non-statistically significant 3.2 percentage points.

Table 7. **Effects of MESG Eligibility for Students from Zip Code Average Income**

	Any College Year 1	Four-Year Year 1	Two-Year Year 1	Associate by Year 6	Bachelor's by Year 6
Below Average Income Zip Code	+ 1.4 percentage points	+ 6.7* percentage points	- 5.2* percentage points	-1.6 percentage points	+ 5.9* percentage points
Above Average Income Zip Code	+4.3** percentage points	+10.9** percentage points	- 6.4** percentage points	-1.9 percentage points	+ 3.2 percentage points

Note: * Indicates statistically significant at 5% level. ** Indicates Statistically significant at 1% level.
Results best reflect the effect of MESG receipt for students closest to the ACT cut score of 29.
These results reflect scaled RDD results at a bandwidth of -5,5 using MESG eligibility as an IV for MESG receipt.

Summary: There is clear evidence that MESG shapes the decisions of students to enroll in four-year colleges in the state. About two-thirds of those students appear to be using the funds to attend a Mississippi four-year college instead of a Mississippi two-year college, while the remaining third, who may have not otherwise enrolled, are encouraged to enroll in Mississippi four-year colleges. MESG also raises the likelihood of bachelor's degree attainment by 4 percentage points.

The effect of MESG may also vary by the income status of families. Students from zip codes with below-average incomes are more likely to use the aid to transition between two- and four-year colleges in the state. The results for students from zip codes with above-average incomes are more mixed. Forty percent of the increase in four-year college enrollment comes from students attending four-year colleges in Mississippi when they otherwise would not have enrolled in the state for college.

Preliminary Analysis of the MS Resident Tuition Assistance Grant

MTAG is the largest of the three programs I evaluate in this report. A total of 86,128 students in the sample received at least one year of MTAG funding from 2004 to 2013. The majority of MTAG recipients start their postsecondary education in two-year colleges. Of the MTAG recipients going immediately to college, 55 percent attend two-year colleges and 45 percent attend four-year colleges in the state. Fifty-eight percent of MTAG recipients in the sample are female; 78 percent are white; and 18 percent are African American. *Table 8* summarizes background characteristics of MTAG recipients.

Table 8. **Characteristics of MTAG Recipients from 2004 to 2013**

	Two-Year College	Four-Year College	Female	White	African American
MTAG Recipients	55%	45%	58%	78%	18%

As shown previously in *Figure 1*, students in Mississippi with a 15 on the ACT—the cutoff score for MTAG—are more likely to fill out the application for financial aid than similar students with a 14 on the ACT. Across our sample, 22 percent of students with a 14 on the ACT fill out the application for aid through the OSFA website compared to 33 percent of students scoring a 15 on the ACT.

Table 9 details the number of years that students receive MTAG within the sample. The largest portion of students receives MTAG for one academic year (34 percent) while 30 percent receive it for four years. 36 percent receive it for two or three years. The table includes MTAG receipt for students starting in both two- and four-year colleges.

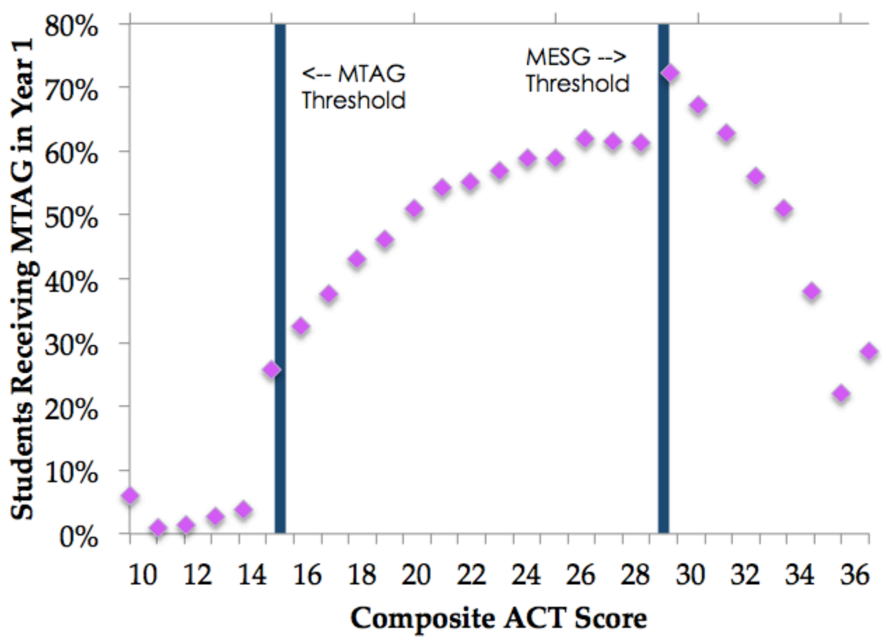
Table 9. **Number of Years Receiving Funds for MTAG Recipients**

	1 Year	2 Years	3 Years	4 Years
MTAG Recipients	22,149	12,895	10,158	19,206
Portion of MTAG Recipients	34%	20%	16%	30%

Note: Sample here limited to classes of 2010 and earlier to view 4-year participation in MTAG.

Examining how MTAG eligibility shapes the decisions of students to enroll in Mississippi colleges requires a closer look at MTAG receipt by ACT Score. Here, the analysis focuses on those students around the threshold for MTAG eligibility—a 15 on the ACT. *Figure 4* details the portion of students receiving MTAG funds the fall after high school graduation by ACT score. The figure highlights two sharp increases in the portion of students receiving MTAG funds—one at the ACT score of 15 and one at the ACT score of 29, where MESG eligibility begins. In other words, the MTAG program is largely distributing funds starting at the ACT score of 15 according to its rule, but we also see a jump in the portion of students receiving MTAG around the MESG cutoff score because students are able to receive both grants under Mississippi guidelines.

Figure 4. **Portion of Students Receiving MTAG by ACT Score**



Note: Sample limited to Classes of 2008 and earlier for students with at least a 2.5 HS GPA.

Regression Discontinuity Analysis of Mississippi Resident Tuition Assistance Grant

This section reviews the academic outcomes associated with MTAG eligibility for Mississippi high school graduates. An important distinction to keep in mind is that these estimates most closely reflect the effects of MTAG for those students who are barely eligible for the program—in this case those who received a 15 on the ACT. Because the RDD approach compares the barely eligible to the nearly eligible—those with an ACT of 15 versus those with an ACT of 14—the estimates apply best to this population and may vary as students score further away from the program threshold. In reviewing the results, it is best to think of each as the effect of MTAG for students with an ACT score near 15.

Two- and Four-Year College Enrollment: *Table 10* provides the RDD results for the effects of MTAG eligibility on postsecondary enrollment and degree attainment. With a high level of certainty, MTAG increases the likelihood that students near the cutoff score enroll in a Mississippi four-year college. Students eligible for the grant are 6.2 percentage points more likely to enroll in a four-year college. The MTAG program does not appear to significantly change the likelihood that students enroll in a two-year college.

Table 10. **Effects of MTAG Eligibility on Postsecondary Outcomes**

	Any MS College Year 1	Two-Year College Year 1	Four-Year College Year 1	Associate Degree in Year 6	Bachelor's Degree in Year 6
Effect of MTAG Eligibility	+ 4.6** percentage points	- 1.6 percentage points	+ 6.2** percentage points	+ 0.9 percentage points	+1.1 percentage points
Average for Students Scoring 14 on ACT	68.7%	62.3%	6.4%	12.3%	4.2%

Note: All students in results graduated from high school before 2011 and have at least a 2.5 HS GPA.
* Indicates statistically significant at 5% level. ** Indicates Statistically significant at 1% level.
Results best reflect the effect of MTAG eligibility for students closest to the ACT cut score of 15.
These results reflect scaled RDD results at a bandwidth of -6,6 using MTAG eligibility as an IV for MTAG receipt.

Degree Attainment: There is less certainty that MTAG eligibility increases degree attainment for Mississippi students. *Table 10* indicates that both bachelor's and associate degree attainment among MTAG recipients rises slightly; however, neither of these results is statistically significant. Only 4 percent of students with an ACT score of 14 graduate with a bachelor's degree within six years of high school graduation. Students eligible for MTAG are 1 percentage point more likely to attain a bachelor's degree in six years.

Appendix II provides additional figures and in-depth regression results to support the MTAG analysis.

Mississippi MTAG Spending Per Degree: On average, Mississippi distributes $201 in MTAG funds to students that just meet eligibility criteria for the program over the course of their college careers. This investment increases bachelor's degree attainment by 1 percentage point. Taken together, Mississippi awards $18,143 in MTAG funds per bachelor's degree earned at a Mississippi institution.[3] For students near the eligibility threshold, the cost per degree of MTAG is significantly lower than MESG because

[3] Cost calculation: $200.97 / 0.01108 = $133,254 per degree.

(1) MTAG's aid amount per eligible student is smaller, and (2) MTAG spurs low-skill students to attend four-year institutions who otherwise would not have enrolled or completed a bachelor's degree.

Summary: MTAG clearly raises the portion of students near the program threshold enrolling in four-year colleges. This increase also raises the overall number of high school graduates who enroll in Mississippi colleges. However, the aid from MTAG does not significantly increase enrollment in two-year colleges for students around the threshold. The program may also modestly increase degree attainment for students in two- and four-year colleges, but these results are not significant and are less certain.

Preliminary Analysis of the Higher Education Legislative Plan Grant

HELP is the smallest of the three programs assessed in this report. A total of 2,608 students in the sample received at least one year of HELP grant funding. In FY2014, 918 received at least one year of HELP funding—up from 289 in FY2010.[xxxvii] The Office of Student Financial Aid has made an intentional effort to spread the word about HELP to schools and residents over the last several years, and it believes these efforts have been responsible for an increase in recipients.

Twenty-one percent of students receiving HELP one year after high school enrolled in two-year colleges. Sixty-nine percent of HELP recipients enrolled in public four-year colleges, and 9 percent enrolled in private four-year colleges in the state. *Table 11* presents summary characteristics of students receiving a HELP grant in the sample, and *Table 12* presents data on the number of years HELP recipients receive funding.

Table 11. **Demographic Characteristics of Students Receiving at least 1 Year of HELP Funds**

	African American	White	Other Race	Missing Race	Female	Male
HELP Recipients	37.6%	56.4%	4.5%	1.5%	64.8%	35.2%

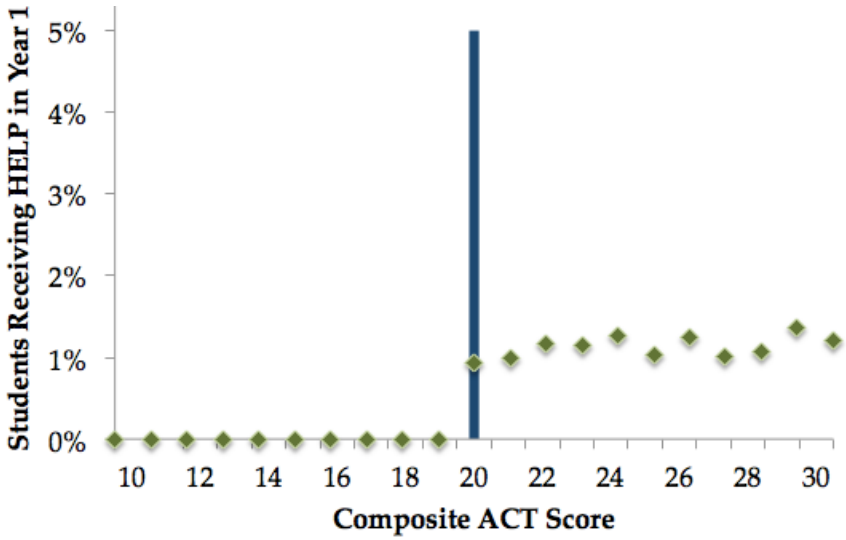
Table 12. **Number of Years Receiving HELP Funds**

	1 Year	2 Years	3 Years	4+ Years
HELP Recipients	349	189	346	265
Portion of HELP Recipients	30%	17%	30%	23%

*Note: Sample excludes classes 2011, 2012 and 2013 because 4 years of data not yet available.

Data from the OSFA reveals that a very small portion of the students potentially eligible for HELP actually applies for and receives the funds. This is in contrast to MESG where close to 80 percent of potentially eligible students apply for and receive the grant. *Figure 5* shows that just over 1 percent of students from the classes of 2004 through 2010 who meet academic requirements for HELP (a 2.5 GPA and 20 on the ACT) enrolled in the program. Among the high school graduating class of 2013—the highest year for HELP enrollment—5 percent of the 9,900 Mississippi students who met GPA and ACT requirements received HELP.

Figure 5. **Portion of Students Receiving HELP in Year 1 by ACT Score**



Note: Sample limited to Classes of 2008 and earlier for students with at least a 2.5 HS GPA.

Of course, not all students who meet academic requirements are eligible for HELP—income thresholds further decrease the pool of potentially eligible students. Unfortunately, because of missing data and the tiered nature of the income thresholds for HELP eligibility, data on family income was not complete enough to narrow down eligible students. However, given that the median household income in Mississippi is below the income threshold for the HELP program, one can estimate that a fraction of eligible students apply for funds each year.

The small proportions of eligible students receiving HELP prevented an analysis of the program for effects on postsecondary enrollment or degree attainment. Because 1 percent of potentially eligible students around the ACT cutoff score of 20 receive the aid, the maximum bump one would expect in outcomes, like enrollment or degree attainment, would also be 1 percent or less—too small an effect to be captured through the RDD approach used for the MESG and MTAG programs. At this time, descriptive data on the HELP program is all that can be provided; however, in the future if a larger portion of HELP-eligible students enrolled in the program, there would be the potential to conduct a similar analysis.

Recommendations

1) Leadership in IHL, universities and the state legislature should review the effects of MESG and MTAG described here to determine if the programs meet the goals of the State of Mississippi.

Mississippi invested $19 million collectively in MESG and MTAG in FY2014. Given that investment, are these programs meeting the goals set out by the state? Mississippi spends $139,000 in MESG funds for each additional bachelor's degree earned at a Mississippi college. Findings on MESG indicate that one-third of the increase in four-year college enrollment associated with the program comes from students who would not have otherwise enrolled in a Mississippi college. Two-thirds of the increase in four-year college enrollment comes from students switching from a Mississippi two-year college. The state may determine this is a desired use of funds, but it changes somewhat the narrative that the program is designed with the focus of keeping talents students in the state for college.

Findings from MTAG indicate that the program substantially increases enrollment among low-skill students in four-year colleges; however, the program does not significantly increase associate or bachelor's degree attainment. Given these results, Mississippi's leadership can discuss whether college enrollment alone is the intended goal of the program or whether they should invest in strategies specifically designed to increase degree attainment among Mississippi's high school graduates.

2) OSFA should work to improve outreach to students, families and high schools regarding the HELP application process and available aid amounts.

From 2004 to 2013, fewer than 2 percent of Mississippi students, who met the ACT and GPA criteria for HELP, applied for and received the award. The state has the potential to raise HELP enrollment significantly and more fully meet the mission of the HELP program. As an example of bolstering engagement with students and families, the College Board produces videos with student testimonials about applying for and receiving aid that can be shared online through email or social media.[xxxviii] Research also indicates that completing the FAFSA—which is a requirement to apply for the HELP grant as well—is a significant barrier to applying for financial aid and enrolling in college.[xxxix] Efforts to support FAFSA completion have been proven to significantly increase the receipt of federal financial aid. Helping Mississippi families complete a FAFSA and apply for state financial aid is one strategy the state could invest resources and time in with the goal of similarly raising HELP applications. Finally, OSFA could notify all students meeting the ACT and high school GPA thresholds about the HELP program and encourage them to review additional requirements and apply.

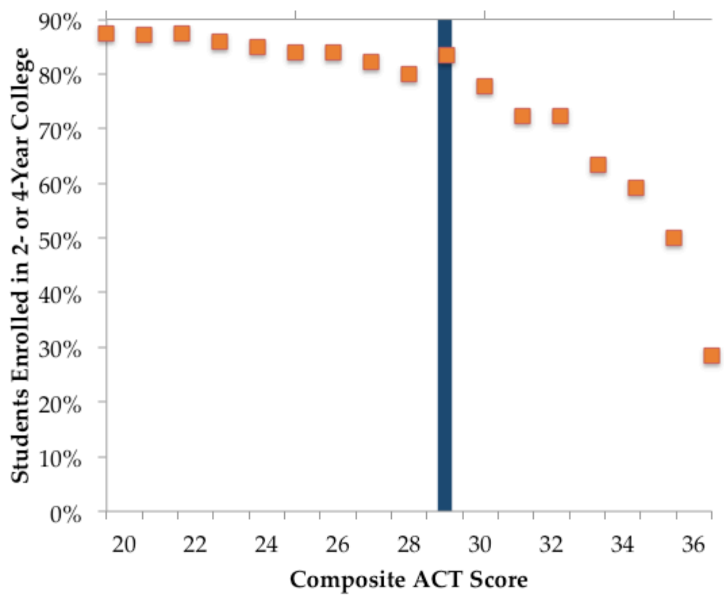
3) OSFA should incorporate National Student Clearinghouse data into this analysis to better measure the extent to which financial aid changes students' decisions to leave the state for college.

Although this analysis yields key findings associated with all three grants, there are still questions left unanswered for the OSFA and Institutions of Higher Learning. Across the academic spectrum, where do Mississippi's high school graduates enroll outside of the state for college? If students are eligible for MESG funds—but choose not to apply for the award—where do they go outside of the state for college? All else equal, are Mississippi high school graduates more likely to receive a bachelor's degree if they attend four-year college inside or outside of the state? These are examples of questions that will be answered once an analysis of National Student Clearinghouse data is conducted. NSC receives reports on college enrollment and degree attainment from 3,600 colleges in the United State each year. The Clearinghouse can match its records with files of high school graduates supplied by OSFA to determine where all Mississippi high school graduates attend college and if they complete a degree. An analysis that incorporates NSC data could potentially shape how OSFA and the Institutions of Higher Learning design aid programs in the future and think about the role of financial aid as a tool for both college success and in-state recruitment. Having the data is a critical next step for key policy decisions in higher education for financial aid and beyond.

Appendix I. Supplemental MESG Results

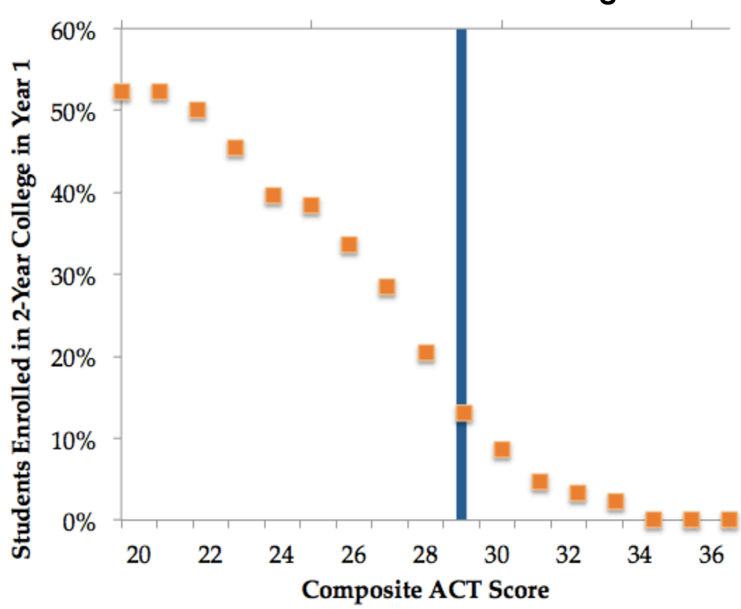
Additional figures to review discontinuities in outcomes around MESG threshold of 29 on ACT.

Figure 1. **Portion of Students Enrolled in MS Postsecondary Education The Fall After High School Graduation by ACT Score**



Note: Sample limited to Classes of 2008 and earlier for students with at least a 3.5 HS GPA.

Figure 2. **Portion of Students Enrolled in MS Two-Year Colleges in Year 1 by ACT Score**



Note: Sample limited to Classes of 2008 and earlier for students with at least a 3.5 HS GPA.

Table 1. **Results of RDD Approach for MESG Eligibility by Bandwidth**

Bandwidth	College Year 1	Four-Year College Year 1	Two-Year College Year 1	Associate in Year 6	Bachelor's in Year 6
(-7,7)	0.037** (0.011)	0.105** (0.014)	-0.067** (0.011)	-0.030** (0.009)	0.020 (0.014)
(-6,6)	0.034** (0.012)	0.101** (0.015)	-0.066** (0.012)	-0.021* (0.009)	0.027 (0.015)
(-5,5)	0.034* (0.013)	0.098** (0.017)	-0.062** (0.013)	-0.020* (0.009)	0.040* (0.017)
(-4,4)	0.038* (0.015)	0.074** (0.019)	-0.035* (0.015)	-0.009 (0.011)	0.039* (0.019)
(-3,3)	0.048** (0.018)	0.068** (0.023)	-0.019 (0.019	0.004 (0.013)	0.029 (0.022)

Note: * 0.00<p<0.05 ** p<0.01

For the purposes of this report, these regression results for the effect of MESG eligibility on outcomes were scaled using MESG as an instrument for MESG receipt. The results reported in the paper are those scaled results, so the effect MESG receipt rather than eligibility could be reported to the Office of Student Financial Aid.

Appendix II. Supplemental MTAG Results

Table 1. **Mississippi College Enrollment and Degree Attainment for Students with at least a 2.5 HS GPA**

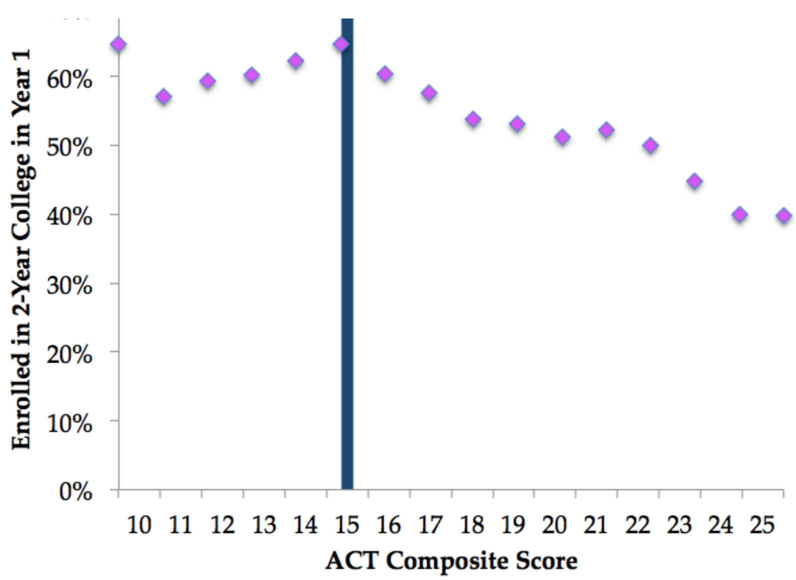
ACT Score	Four-Year Year 1	Two-Year Year 1	Associate Degree in Year 6	Bachelor's Degree in Year 6
10	0.0%	64.7%	5.9%	0.0%
11	1.0%	57.1%	3.1%	1.0%
12	3.6%	59.4%	8.4%	1.7%
13	5.2%	60.3%	9.2%	2.8%
14	6.4%	62.3%	12.3%	4.1%
15	8.9%	64.7%	15.2%	6.0%
16	17.9%	60.3%	16.4%	8.8%
17	22.6%	57.5%	16.8%	11.9%
18	28.0%	53.8%	16.9%	14.4%
19	29.2%	53.1%	18.4%	16.7%
20	32.0%	51.3%	18.2%	19.9%
21	31.9%	52.2%	18.8%	21.4%
22	34.8%	50.1%	18.5%	23.3%
23	39.1%	44.8%	17.8%	25.5%
24	43.8%	40.0%	15.5%	29.2%
25	43.3%	39.8%	15.6%	29.7%
26	49.0%	34.1%	14.4%	30.2%
27	52.3%	29.3%	12.0%	31.9%
28	57.3%	22.4%	8.8%	33.1%
29	67.9%	15.0%	7.4%	36.6%
30	68.5%	9.8%	4.8%	35.7%
31	67.6%	5.3%	2.7%	33.8%
32	69.3%	4.0%	2.1%	32.6%
33	61.8%	2.1%	2.1%	28.6%
34	59.4%	0.0%	0.6%	29.0%
35	50.7%	0.0%	0.0%	27.4%
36	28.6%	0.0%	0.0%	14.3%

Table 2. **Results of RDD Approach for MTAG Eligibility by Bandwidth**

Bandwidth	College Year 1	4-Year College Year 1	2-Year College Year 1	Associate in Year 6	Bachelor's in Year 6
(-8,8)	0.054** (0.018)	0.071** (0.009)	-0.017 (0.018)	0.013 (0.011)	0.015* (0.007)
(-7,7)	0.049** (0.017)	0.070** (0.009)	-0.020 (0.018)	0.011 (0.011)	0.013* (0.007)
(-6,6)	0.046** (0.017)	0.062** (0.009)	-0.016 (0.018)	0.009 (0.011)	0.011 (0.007)
(-5,5)	0.043* (0.018)	0.048** (0.009)	-0.006 (0.018)	0.009 (0.012)	0.009 (0.007)
(-4,4)	0.035* (0.018)	0.038** (0.009)	-0.003 (0.019)	0.006 (0.012)	0.009 (0.007)
(-3,3)	0.031 (0.020)	0.026* (0.10)	0.005 (0.021)	0.011 (0.013)	0.007 (0.008)

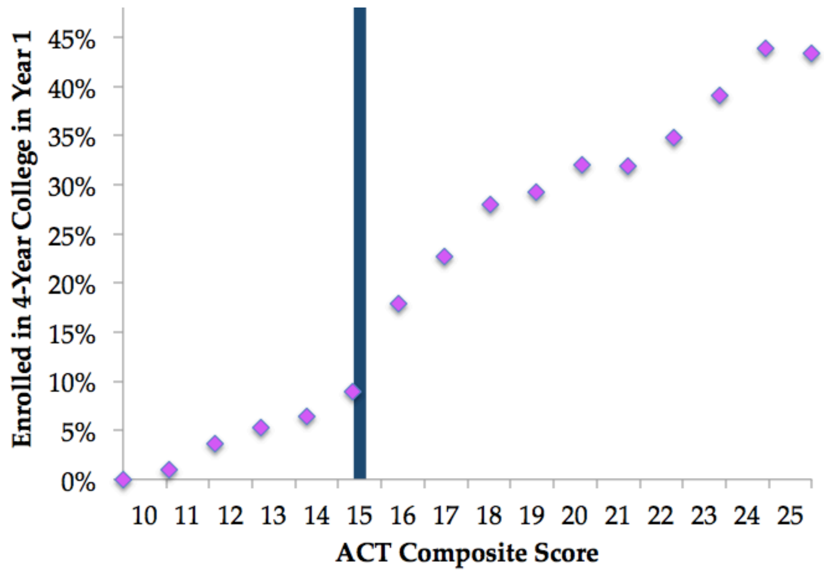
Note: * 0.00<p<0.05 ** p<0.01
For the purposes of this report, these regression results for the effect of MTAG eligibility on outcomes were scaled using MTAG as an instrument for MTAG receipt. The results reported in the paper are those scaled results, so the effect MTAG receipt rather than eligibility could be reported to the Office of Student Financial Aid.

Figure 1. **Portion Enrolled in Mississippi Two-Year Colleges in Year 1 by ACT Score**



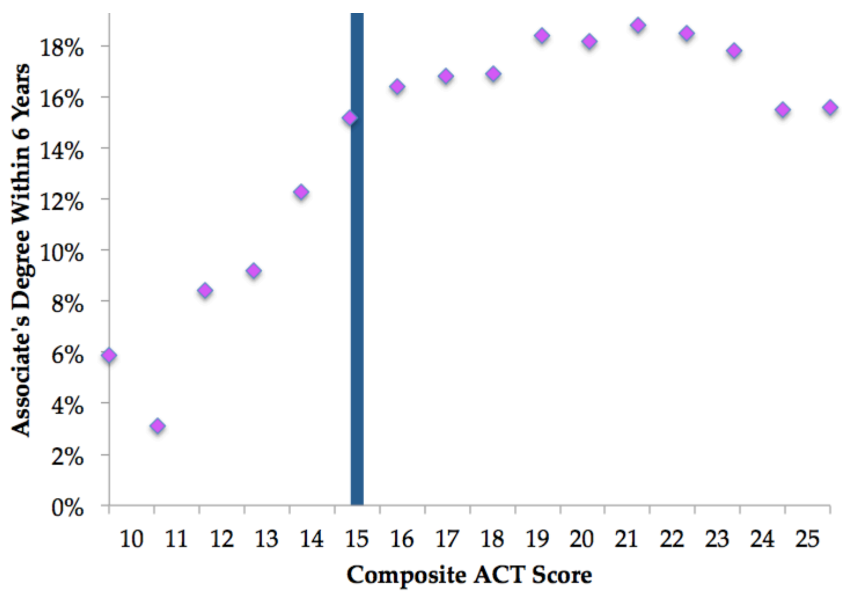
Note: Sample limited to Classes of 2008 and earlier for students with at least a 2.5 HS GPA.

Figure 2. **Portion Enrolled in Four-Year Colleges in Mississippi in Year 1 by ACT Score**



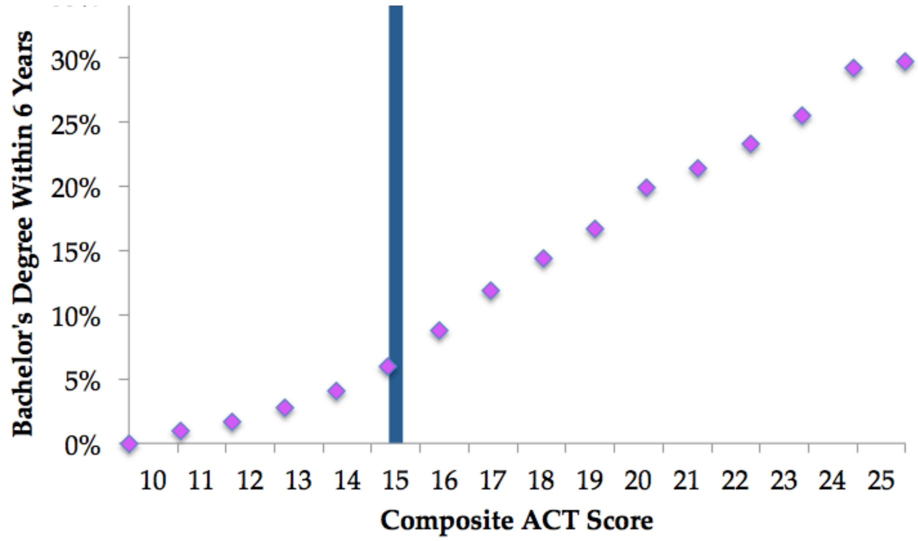
Note: Sample limited to Classes of 2008 and earlier for students with at least a 2.5 HS GPA.

Figure 3. **Portion Receiving Associate Degree 6 Years After High School by ACT Score**



Note: Sample limited to Classes of 2008 and earlier for students with at least a 2.5 HS GPA.

Figure 4. **Portion of Students with Bachelor's Degree 6 Years After High School**



Note: Sample limited to Classes of 2008 and earlier for students with at least a 2.5 HS GPA.

Sources

[i] US Census Bureau. 2013 American Community Survey 5-Year Averages. Educational Attainment. Table S1501.
[ii] US Census Bureau. 2013 American Community Survey 5-Year Averages. Economic Characteristics. Table DP03.
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