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AD HOC REPORT REQUEST #18-009

Requestor: Mississippi Office of Student Financial Aid

RESEARCH HIGHLIGHTS:

This report provides the results of a study requested by the Mississippi Office of Student Financial Aid. The request was for information on the impact of student financial aid programs funded by the state of Mississippi on postsecondary outcomes, in-state enrollment of high-performing students, and the retention of college graduates in the state workforce.

Effect of Mississippi Student Grants on Postsecondary Outcomes

The study examined what effect receiving the Mississippi Tuition Assistance Grant (MTAG), the Mississippi Eminent Scholar Grant (MESG), and the Higher Education Legislative Plan for Needy Students (HELP) has on the postsecondary outcomes of Mississippi community college and Mississippi public university students. The analysis examined students receiving each type of aid in relation to students in a comparison group with similar demographic, economic, and academic characteristics who did not receive the respective type of aid. The specific findings for each program are described below.

Continued Enrollment in a Mississippi Community College or Mississippi Public University

- **88.3%** of students receiving MTAG as an entering degree-seeking freshman remained enrolled at a Mississippi public postsecondary institution one year after initial enrollment, compared to **79.4%** of the comparison group (see Table 2).
- **89.3%** of students receiving HELP as an entering degree-seeking freshman remained enrolled at a Mississippi public postsecondary institution one year after initial enrollment, compared to **89.4%** of the comparison group (see Table 36).
- **96.5%** of students receiving MESG as an entering degree-seeking freshman remained enrolled at a Mississippi public postsecondary institution one year after initial enrollment, compared to **93.3%** of the comparison group (see Table 25).

Graduation from a Mississippi Community College or Mississippi Public University

- **69.5%** of students who first received MTAG as an entering degree-seeking freshman graduated within six years of initial enrollment, compared to **58.2%** of the comparison group (see Table 5).
- **81.8%** of students who first received MTAG *after* their freshman year graduated within six years of initial enrollment, compared to **75.4%** of the comparison group (see Table 16).
- **75.4%** of students who first received HELP as an entering degree-seeking freshman graduated within six years of initial enrollment, compared to **67.3%** of the comparison group (see Table 38).
- **88.0%** of students who first received HELP *after* their freshman year graduated within six years of initial enrollment, compared to **80.3%** of the comparison group (see Table 47).
- **86.2%** of students who first received MESG as an entering degree-seeking freshman graduated within six years of initial enrollment, compared to **70.1%** of the comparison group (see Table 27).

Employment in Mississippi after Graduation

- **77.8%** of graduates that first received MTAG as an entering degree-seeking freshman were employed in Mississippi within one year, making **\$31,103** on average. The corresponding figures for the comparison group were **75.2%** and **\$30,267** (see Table 9).

77.4% of graduates that first received MTAG *after* their freshman year were employed in Mississippi within one year, making **\$31,788** on average. The corresponding figures for the comparison group were **74.8%** and **\$31,383** (see Table 20).

- **74.2%** of graduates that first received HELP as an entering degree-seeking freshman were employed in Mississippi within one year, making **\$29,130** on average. The corresponding figures for the comparison group were **71.9%** and **\$29,902** (see Table 42).

76.8% of graduates that first received HELP *after* their freshman year were employed in Mississippi within one year, making **\$28,749** on average. The corresponding figures for the comparison group were **76.1%** and **\$30,924** (see Table 50).

- **57.7%** of graduates that first received MESH as an entering degree-seeking freshman were employed in Mississippi within one year, making **\$32,405** on average. The corresponding figures for the comparison group were **63.9%** and **\$28,992** (see Table 31).

The results of the multivariate analyses show that, controlling for demographic, economic, and academic characteristics of students, receiving each type of financial aid (MTAG, MESH, HELP) as an entering degree-seeking freshman is significantly and positively associated with earning a Mississippi public university or community college degree within six years of enrollment. The results are less consistent across programs for other postsecondary outcomes.

Effect of MESH Availability on the In-State Enrollment of High-Performing Mississippi Students

The study examined if the opportunity for MESH student financial aid encourages eligible Mississippi high school graduates (i.e. those with an ACT score of 29 or higher) to enroll in Mississippi community colleges and Mississippi public universities. The analysis was conducted by comparing the in-state enrollment rates of students scoring at or just above the minimum ACT level required for MESH eligibility to those who scored just below the threshold. The following results were obtained:

- MESH availability was not found to have a significant effect on overall enrollment in Mississippi community colleges and Mississippi public universities (see Table 54).

The Employment Retention of Forgivable Loan Recipients

The study examined the extent to which Mississippi community college and Mississippi public university graduates who received a forgivable state loan completed their service obligation (i.e., worked in Mississippi in a specified field for a certain number of years following graduation) and remained employed in the state after completing this service obligation. The following results were obtained:

- **81.0%** of graduates who received a William Winter Teacher/Alternate-Route Teacher Forgivable Loan completed their teaching service obligation (see Table 56).

73.2% of those who completed their service obligation remained employed as a Mississippi public school teacher five years later (see Table 57).

- **81.9%** of graduates who received an undergraduate-level Nursing Education Forgivable Loan completed the nursing service obligation (see Table 58).

79.2% of those who completed their service obligation remained employed in Mississippi in a nursing field five years later (see Table 59).

- **91.2%** of graduates who received a graduate-level Nursing Education Forgivable Loan completed the nursing service obligation (see Table 60).

94.7% of those who completed their service obligation remained employed in Mississippi in a nursing field three years later (see Table 61).

REQUEST:

Each year, the Mississippi Legislature appropriates nearly \$40 million for support of the state's student financial aid programs. This investment has grown steadily since the creation of the three primary grant programs in the late 1990s, but very little analysis has been conducted on the effectiveness or impact of the programs or investment as a whole. Ultimately, the Mississippi Office of Student Financial Aid (MOSFA) would like to provide data to policymakers and institutional leaders that will help to optimize state financial aid programs to benefit the right students and in turn positively impact Mississippi's workforce.

To achieve this goal, MOSFA seeks answers to the following three research questions:

1. Do beneficiaries of each of the following financial aid programs experience better outcomes (i.e., persist and graduate at higher rates, find employment at higher rates, earn higher average incomes, etc.) than similar (i.e., income, race, academic prep in high school, etc.) students who do not receive aid?
 - a. Mississippi Tuition Assistance Grant
 - b. Mississippi Eminent Scholars Grant
 - c. Higher Education Legislative Plan for Needy Students
2. Does the availability of the Mississippi Eminent Scholars Grant increase in-state enrollment of high-achieving students?
3. Do forgivable loan recipients stay in appropriate fields of employment after completing the service obligation?

METHODOLOGY:

- 1. Do beneficiaries of each of the following financial aid programs experience better outcomes (i.e., persist and graduate at higher rates, find employment at higher rates, earn higher average incomes, etc.) than similar (i.e., income, race, academic prep in high school, etc.) students who do not receive aid?**
 - a. Mississippi Tuition Assistance Grant**
 - b. Mississippi Eminent Scholars Grant**
 - c. Higher Education Legislative Plan for Needy Students**

To address this item, the educational and labor market outcomes of students obtaining financial aid through the Mississippi Tuition Assistance Grant (MTAG), the Mississippi Eminent Scholars Grant (MESG), and the Higher Education Legislative Plan for Needy Students (HELP) were examined. In particular, the outcomes of students receiving each type of aid (MTAG, MESG, or HELP) were assessed in relation to the outcomes of a comparison group comprised of students not participating in the aid program. To provide for a closer comparison, the data on comparison group members were weighted so that their average values on key social and academic characteristics (e.g., sex, race, GPA) matched those of the corresponding group of aid recipients.¹ The specific methodology that was used in examining each set of program participants is described below.

¹ In particular, cell weights were applied to the comparison groups included in the analysis. Cell weighting is commonly deployed to make the average characteristics of a focal group more closely resemble those of a particular "target" group. To calculate cell weights, the focal and target groups are first broken down into strata, where each stratum is defined by a series of characteristics that the researcher wants to adjust for. For example, if a researcher wants to adjust the focal group's distributions by sex, race, and poverty status, one stratum would consist of white males in poverty, a second would consist of black females not in poverty, etc. The percentage of the focal group that falls within a given stratum is then divided by the percentage of the target group in the same stratum to obtain the weight that will be applied to members of the focal group in the stratum. Cell weighting is frequently applied in survey design in order to correct for non-response bias and to take into account oversampling.

Mississippi Tuition Assistance Grant

The Mississippi Tuition Assistance Grant (MTAG) is provided to students enrolling full-time in certificate, associate, and bachelor's programs at Mississippi community colleges and universities in order to expand educational opportunities in the state. MTAG can be awarded for up to eight semesters or until degree completion (whichever occurs sooner). The program provides a maximum of \$500 per year to freshmen and sophomores and \$1,000 per year to juniors and seniors. To be eligible for MTAG as an entering degree-seeking freshman, students must graduate high school with a cumulative GPA of at least 2.5 out of 4 (or complete home school), score at least 15 on the ACT, and not be eligible for a full federal Pell Grant. To be eligible for MTAG while currently enrolled in college, students must complete at least 12 hours of college credit, have at least a 2.5 cumulative college GPA, and not be eligible for a full federal Pell Grant.

In examining the outcomes of MTAG recipients, students first obtaining MTAG aid as an entering degree-seeking freshman and students first obtaining MTAG aid as a continuing college student were analyzed separately. The approach that was used to examine each of these groups is described below.

Students Receiving MTAG as an Entering Degree-Seeking Freshman

A prospective cohort design was used in which students matriculating to a community college or public university in a given year are followed over time. Seven cohorts were identified for academic years 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010, and 2010-2011². Each cohort is comprised of students enrolling in a Mississippi community college or Mississippi public university who received financial aid through the MTAG program during their first semester of enrollment.

A set of comparison cohorts was also included in the analysis to provide a basis for evaluating the outcomes of MTAG recipients. Specifically, seven cohorts were identified for academic years 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010, and 2010-2011. Each cohort is comprised of students enrolling in a Mississippi community college or Mississippi public university on a full-time basis who met the ACT, GPA, and Pell Grant eligibility criteria for MTAG but did *not* receive financial aid through MTAG during their first semester of enrollment. The members of these comparison cohorts were weighted such that their average social and academic characteristics match those of the MTAG cohorts specified above, allowing for differences in outcomes between the two groups to be more easily attributed to the effect of MTAG receipt. The characteristics on which the comparison cohorts were matched to the MTAG cohorts included race, gender, expected family contribution category (i.e., not eligible for PELL grant, eligible for partial PELL grant), high school GPA category, ACT score category, and type of postsecondary institution initially enrolled in (i.e., community college or public university).

The analysis has both descriptive and multivariate components. The following descriptive results are provided for both the MTAG and comparison cohorts:

1. The number and percentage who remained enrolled in a Mississippi community college or Mississippi public university one year after initial enrollment.
2. The number and percentage who earned a degree from a Mississippi community college or Mississippi public university within six years of initial enrollment.
3. The frequency and percentage distributions of those earning a degree from a Mississippi community college or Mississippi public university within six years by type of degree earned (i.e., AAS technical degree, technical/career certificate, university parallel AA/AS degree, or bachelor's degree).

² This analysis and the other analyses specified for Item 1 focus on students matriculating to Mississippi public postsecondary institutions between 2004-2005 and 2010-2011 because complete community college enrollment data is not available prior to 2004-2005 and because the academic/employment outcomes of interest (described later in this document) cannot yet be fully measured for individuals enrolling after 2010-2011.

4. The number and percentage of those receiving a degree from a Mississippi community college or Mississippi public university who assumed employment in Mississippi within one year of degree attainment, and the average annualized earnings of those so employed. These figures are disaggregated by type of degree earned (i.e., AAS technical degree, technical/career certificate, university parallel AA/AS degree, or bachelor's degree).

Breakdowns of these figures by students' social and academic characteristics (e.g., race, gender, ACT score category) are reported. Results are provided in total and by cohort. Cell counts less than 10 are not reported.

For the multivariate component of the analysis, a series of four regressions encompassing both the MTAG and comparison cohorts were run to estimate the relationship between MTAG receipt and students' educational and labor market outcomes, after controlling for other characteristics. These regressions serve to provide estimates of MTAG's effects that adjust for residual differences in social and academic characteristics between MTAG-receiving and comparison students. In all four regressions, the key explanatory variable is a binary term indicating whether the student received MTAG aid during their first semester of postsecondary enrollment. The outcome variables examined in the four regressions are, respectively:

1. A binary variable indicating whether the student remained enrolled in a Mississippi community college or Mississippi public university one year after initial enrollment.
2. A binary variable indicating whether the student had earned a degree from a Mississippi community college or Mississippi public university within six years of initial enrollment.
3. A binary variable indicating whether the student was employed in Mississippi within one year of earning a Mississippi community college or Mississippi public university degree.
4. A continuous variable indicating the annualized earnings of the student after earning a Mississippi community college or Mississippi public university degree and assuming employment in Mississippi.

Among the factors included in the regressions as control variables are student's race, gender, expected family contribution (a measure of economic well-being), high school GPA, ACT score, type of postsecondary institution initially enrolled in (i.e., community college or public university), and—for Regressions 3 and 4—type of degree earned (i.e., AAS technical degree, technical/career certificate, university parallel AA/AS degree, or bachelor's degree).

Furthermore, additional regressions were run that are identical to those specified above except that they also include explanatory terms measuring the interaction between MTAG receipt and the control variables. The results from these supplemental regressions serve to indicate whether the effect of MTAG receipt differs by factors such as race and gender.

Students Receiving MTAG while Enrolled in College

A prospective cohort design was used in which students receiving aid for the first time are followed over time. One cohort was identified for academic year 2011-2012. The cohort is comprised of students enrolled in a Mississippi community college or Mississippi public university for the second, third, fourth, fifth, or sixth consecutive year who began receiving financial aid through MTAG.

A comparison cohort was also included in the analysis to provide a basis for evaluating the outcomes of MTAG recipients. Specifically, one cohort was identified for academic year 2011-2012. The cohort is comprised of students enrolled in a Mississippi community college or Mississippi public university for the second, third, fourth, fifth, or sixth consecutive year who met the cumulative college GPA and Pell Grant eligibility criteria for MTAG but who did not receive financial aid through MTAG in 2011-2012 or a prior year. The members of these comparison cohorts were weighted such that their average social and academic characteristics matched those of the MTAG cohort specified above, allowing for differences in outcomes between the two groups to be more easily attributed to the effect of MTAG receipt. The characteristics on which the comparison cohort was matched to the MTAG cohort include race, gender, expected family contribution category (i.e., not eligible for PELL grant, eligible for partial PELL grant), cumulative college GPA,

type of postsecondary institution initially enrolled in (i.e., community college or public university), and type of postsecondary institution enrolled in as of 2011-2012 (i.e., community college or public university).

The analysis has both descriptive and multivariate components. The following descriptive results are provided for both the MTAG and comparison cohorts:

1. The number and percentage who earned a degree from a Mississippi community college or Mississippi public university within six years of initial enrollment.
2. The frequency and percentage distributions of those earning a degree from a Mississippi community college or Mississippi public university within six years by type of degree earned (i.e., AAS technical degree, technical/career certificate, university parallel AA/AS degree, or bachelor's degree).
3. The number and percentage of those receiving a degree from a Mississippi community college or Mississippi public university who assumed employment in Mississippi within one year of degree attainment, and the average annualized earnings of those so employed. These figures are disaggregated by type of degree earned (i.e., AAS technical degree, technical/career certificate, university parallel AA/AS degree, or bachelor's degree).

Breakdowns of these figures by students' social and academic characteristics (e.g., race, gender, college GPA category) are reported. Results are provided in total and by cohort. Cell counts less than 10 are not reported.

For the multivariate component of the analysis, a series of three regressions encompassing both the MTAG and comparison cohorts was run to estimate the relationship between MTAG receipt and students' educational and labor market outcomes, after controlling for other characteristics. These regressions serve to provide estimates of MTAG's effects that adjust for residual differences in social and academic characteristics between MTAG-receiving and comparison students. In all three regressions, the key explanatory variable is a binary term indicating whether the student began receiving MTAG aid in 2011-2012. The outcome variables examined in the three regressions are, respectively:

1. A binary variable indicating whether the student had earned a degree from a Mississippi community college or Mississippi public university within six years of initial enrollment.
2. A binary variable indicating whether the student was employed in Mississippi within one year of earning a Mississippi community college or Mississippi public university degree.
3. A continuous variable indicating the annualized earnings of the student after earning a Mississippi community college or Mississippi public university degree and assuming employment in Mississippi.

Among the factors included in the regressions as control variables are student's race, gender, expected family contribution (a measure of economic well-being), type of postsecondary institution initially enrolled in (i.e., community college or public university), type of postsecondary institution enrolled in as of 2011-2012 (i.e., community college or public university), and—for Regressions 2 and 3—type of degree earned (i.e., AAS technical degree, technical/career certificate, university parallel AA/AS degree, or bachelor's degree).

Furthermore, additional regressions were run that are identical to those specified above except that they also include explanatory terms measuring the interaction between MTAG receipt and the control variables. The results from these supplemental regressions serve to indicate whether the effect of MTAG receipt differs by factors such as race and gender.

Mississippi Eminent Scholars Grant

The Mississippi Eminent Scholars Grant (MESG) is provided to high-achieving students enrolling in certificate, associate, and bachelor's programs at Mississippi community colleges and universities. MESG can be awarded for up to eight semesters or until degree completion (whichever occurs sooner). The program provides a maximum of \$2,500 per year. To be eligible for MESG, students must graduate from high school with a cumulative GPA of 3.5 out of 4 (or complete home school) and score at least a 29 on the ACT.

To examine the outcomes of students receiving MESG assistance, a prospective cohort design was used in which students matriculating to a community college or public university in a given year are followed over time. Seven cohorts were identified for academic years 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010, and 2010-2011. Each cohort is comprised of students enrolling in a Mississippi community college or Mississippi public university who received financial aid through the MESG program during their first semester of enrollment.

A set of comparison cohorts was also included in the analysis to provide a basis for evaluating the outcomes of MESG recipients. Specifically, seven cohorts were identified for academic years 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010, and 2010-2011. Each cohort is comprised of students enrolling in a Mississippi community college or Mississippi public university on a full-time basis who met the ACT and GPA eligibility requirements for MESG but did *not* receive financial aid through MESG during their first semester of enrollment. The members of these comparison cohorts were weighted such that their average social and academic characteristics matched those of the MESG cohorts specified above, allowing for differences in outcomes between the two groups to be more easily attributed to the effect of MESG receipt. The characteristics on which the comparison cohorts were matched to the MESG cohorts include race, gender, expected family contribution category (i.e., not eligible for PELL grant, eligible for partial PELL grant, eligible for full PELL grant), and type of postsecondary institution initially enrolled in (i.e., community college or public university).³

The analysis has descriptive and multivariate components. The following descriptive results are provided for both the MESG and comparison cohorts:

1. The number and percentage who remained enrolled in a Mississippi community college or Mississippi public university one year after initial enrollment.
2. The number and percentage who earned a degree from a Mississippi community college or Mississippi public university within six years of initial enrollment.
3. The frequency and percentage distributions of those earning a degree from a Mississippi community college or Mississippi public university within six years by type of degree earned (i.e., AAS technical degree, technical/career certificate, university parallel AA/AS degree, or bachelor's degree).
4. The number and percentage of those receiving a degree from a Mississippi community college or Mississippi public university who assumed employment in Mississippi within one year of degree attainment, and the average annualized earnings of those so employed. These figures are disaggregated by type of degree earned (i.e., AAS technical degree, technical/career certificate, university parallel AA/AS degree, or bachelor's degree).

Breakdowns of these figures by students' social and academic characteristics (e.g., race, gender, initial institution type) are reported. Results are provided in total and by cohort. Cell counts less than 10 are not reported.

For the multivariate component of the analysis, a series of four regressions encompassing the MESG and comparison cohorts was run to estimate the relationship between MESG receipt and students' educational and labor market outcomes, after controlling for other characteristics. These regressions serve to provide estimates of MESG's effects that adjust for residual differences in social and academic characteristics between MESG-receiving and comparison students. In all four regressions, the key explanatory variable is a binary term indicating whether the student received MESG aid during their first semester of postsecondary enrollment. The outcome variables examined in the four regressions are, respectively:

1. A binary variable indicating whether the student remained enrolled in a Mississippi community college or Mississippi public university one year after initial enrollment.
2. A binary variable indicating whether the student had earned a degree from a Mississippi community college or Mississippi public university within six years of initial enrollment.

³ Students were not matched on ACT and high school GPA because the comparison group members were already selected such that they meet the high MESG eligibility standards for these factors.

3. A binary variable indicating whether the student was employed in Mississippi within one year of earning a Mississippi community college or Mississippi public university degree.
4. A continuous variable indicating the annualized earnings of the student after earning a Mississippi community college or Mississippi public university degree and assuming employment in Mississippi.

Among the factors included in the regressions as control variables are student's race, gender, expected family contribution (a measure of economic well-being), high school GPA, ACT score, type of postsecondary institution initially enrolled in (i.e., community college or public university), and—for Regressions 3 and 4—type of degree earned (i.e., AAS technical degree, technical/career certificate, university parallel AA/AS degree, or bachelor's degree).

Furthermore, additional regressions were run that are identical to those specified above except that they also include explanatory terms measuring the interaction between MESH receipt and the control variables. The results from these supplemental regressions serve to indicate whether the effect of MESH receipt differs by such factors as race and gender.

Higher Education Legislative Plan for Needy Students

The Higher Education Legislative Plan for Needy Students (HELP) provides financial aid to students with unmet financial need enrolling in certificate, associate, and bachelor's programs at Mississippi community colleges and universities. HELP can be awarded for up to eight semesters or until degree completion (whichever occurs sooner). The program provides assistance equal to the cost of tuition and fees at a public postsecondary institution. To be eligible for HELP as an entering degree-seeking freshman, students must complete the HELP high school curriculum, meet family income limits, qualify for a full or partial federal Pell grant, score at least a 20 on the ACT, and graduate from high school with a cumulative GPA of 2.5 out of 4 (or complete home school). To be eligible for HELP while enrolled in college, students must complete the HELP high school curriculum, meet family income limits, qualify for a full or partial federal Pell grant, score at least a 20 on the ACT prior to enrolling in college, graduate high school with a cumulative GPA of 2.5 or higher, be a current college freshman, and have a cumulative college GPA of at least 2.5.

In examining the outcomes of HELP recipients, students who received HELP aid as an entering degree-seeking freshman and students who received HELP aid as a current college student were analyzed separately. The approach that was used to examine each of these groups is described below.

Students Receiving HELP as an Entering Degree-Seeking Freshman

A prospective cohort design was used in which students matriculating to a community college or public university in a given year are followed over time. Seven cohorts were identified for academic years 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010, and 2010-2011. Each cohort is comprised of students enrolling in a Mississippi community college or Mississippi public university who received financial aid through the HELP program during their first semester of enrollment.

A set of comparison cohorts was also included in the analysis to provide a basis for evaluating the outcomes of HELP recipients. Specifically, seven cohorts were identified for academic years 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010, and 2010-2011. Each cohort is comprised of students enrolling in a Mississippi community college or Mississippi public university on a full-time basis who met the ACT, GPA, and PELL grant eligibility requirements for HELP but did *not* receive financial aid through HELP. The members of these comparison cohorts were weighted such that their average social and academic characteristics match those of the HELP cohorts specified above, allowing for differences in outcomes between the two groups to be more easily attributed to the effect of HELP receipt. The characteristics on which the comparison cohorts were matched to the HELP cohorts include race, gender, expected family contribution category (i.e., eligible for partial PELL grant, eligible for full PELL grant), high school GPA, ACT score, and type of postsecondary institution initially enrolled in (i.e., community college or public university).

The analysis has both descriptive and multivariate components. The following descriptive results are provided for both the HELP and comparison cohorts:

1. The number and percentage who remained enrolled in a Mississippi community college or Mississippi public university one year after initial enrollment.
2. The number and percentage who earned a degree from a Mississippi community college or Mississippi public university within six years of initial enrollment.
3. The frequency and percentage distributions of those earning a degree from a Mississippi community college or Mississippi public university within six years by type of degree earned (i.e., AAS technical degree, technical/career certificate, university parallel AA/AS degree, or bachelor's degree).
4. The number and percentage of those receiving a degree from a Mississippi community college or Mississippi public university who assumed employment in Mississippi within one year of degree attainment, and the average annualized earnings of those so employed. These figures are disaggregated by type of degree earned (i.e., AAS technical degree, technical/career certificate, university parallel AA/AS degree, or bachelor's degree).

Breakdowns of these figures by students' social and academic characteristics (e.g., race, gender, ACT score category) are reported. Results are provided in total and by cohort. Cell counts less than 10 are not reported.

For the multivariate component of the analysis, a series of four regressions encompassing the HELP and comparison cohorts was run to estimate the relationship between HELP receipt and students' educational and labor market outcomes, after controlling for other characteristics. These regressions serve to provide estimates of HELP's effects that adjust for residual differences in social and academic characteristics between HELP-receiving and comparison students. In all four regressions, the key explanatory variable is a binary term indicating whether the student received HELP aid during their first semester of postsecondary enrollment. The outcome variables examined in the four regressions are, respectively:

1. A binary variable indicating whether the student remained enrolled in a Mississippi community college or Mississippi public university one year after initial enrollment.
2. A binary variable indicating whether the student had earned a degree from a Mississippi community college or Mississippi public university within six years of initial enrollment.
3. A binary variable indicating whether the student was employed in Mississippi within one year of earning a Mississippi community college or Mississippi public university degree.
4. A continuous variable indicating the annualized earnings of the student after earning a Mississippi community college or Mississippi public university degree and assuming employment in Mississippi.

Among the factors included in the regressions as control variables are student's race, gender, expected family contribution (a measure of economic well-being), high school GPA, ACT score, type of postsecondary institution initially enrolled in (i.e., community college or public university), and –for Regressions 3 and 4– type of degree earned (i.e., AAS technical degree, technical/career certificate, university parallel AA/AS degree, or bachelor's degree).

Furthermore, additional regressions were run that are identical to those specified above except that they also include explanatory terms measuring the interaction between HELP receipt and the control variables. The results from these supplemental regressions serve to indicate whether the effect of HELP receipt differs by such factors as race and gender.

Students Receiving HELP as a Current College Student

A prospective cohort design was used in which students matriculating to a Mississippi community college or Mississippi public university in a given year are followed over time. Seven cohorts were identified for academic years 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010, and 2010-2011. Each cohort is comprised of students who enrolled in a Mississippi community college or Mississippi public university who began receiving financial aid through the HELP program the next academic year.

A set of comparison cohorts was also included in the analysis to provide a basis for evaluating the outcomes of HELP recipients. Specifically, seven cohorts were identified for academic years 2004-2005, 2005-2006, 2006-2007, 2007-2008, 2008-2009, 2009-2010, and 2010-2011. Each cohort is comprised of students enrolling in a Mississippi community college or Mississippi public university who met the ACT, GPA, and PELL grant eligibility requirements for receiving HELP during their second year of enrollment but did *not* receive financial aid through HELP in their first or second year of enrollment. The members of these comparison cohorts were weighted such that their average social and academic characteristics match those of the HELP cohorts specified above, allowing for differences in outcomes between the two groups to be more easily attributed to the effect of HELP receipt. The characteristics on which the comparison cohorts were matched to the HELP cohorts include race, gender, expected family contribution category (i.e., eligible for partial PELL grant, eligible for full PELL grant), high school GPA, ACT score, college GPA, and type of postsecondary institution initially enrolled in (i.e., community college or public university).

The analysis has both descriptive and multivariate components. The following descriptive results are provided for both the HELP and comparison cohorts:

1. The number and percentage who earned a degree from a Mississippi community college or Mississippi public university within six years of initial enrollment.
2. The frequency and percentage distributions of those earning a degree from a Mississippi community college or Mississippi public university within six years by type of degree earned (i.e., AAS technical degree, technical/career certificate, university parallel AA/AS degree, or bachelor's degree).
3. The number and percentage of those receiving a degree from a Mississippi community college or Mississippi public university who assumed employment in Mississippi within one year of degree attainment, and the average annualized earnings of those so employed. These figures are disaggregated by type of degree earned (i.e., AAS technical degree, technical/career certificate, university parallel AA/AS degree, or bachelor's degree).

Breakdowns of these figures by students' social and academic characteristics (e.g., race, gender, college GPA category) are reported. Results are provided in total and by cohort. Cell counts less than 10 are not reported.

For the multivariate component of the analysis, a series of three regressions encompassing the HELP and comparison cohorts was run to estimate the relationship between HELP receipt and students' educational and labor market outcomes, after controlling for other characteristics. These regressions serve to provide estimates of HELP's effects that adjust for residual differences in social and academic characteristics between HELP-receiving and comparison students. In all three regressions, the key explanatory variable is a binary term indicating whether the student received HELP aid in the academic year following initial enrollment. The outcome variables examined in the three regressions are, respectively:

1. A binary variable indicating whether the student had earned a degree from a Mississippi community college or Mississippi public university within six years of initial enrollment.
2. A binary variable indicating whether the student was employed in Mississippi within one year of earning a Mississippi community college or Mississippi public university degree.
3. A continuous variable indicating the annualized earnings of the student after earning a Mississippi community college or Mississippi public university degree and assuming employment in Mississippi.

Among the factors included in the regressions as control variables are student's race, gender, high school GPA, ACT score, college GPA, type of postsecondary institution initially enrolled in (i.e., community college or public university), and –for Regressions 2 and 3– type of degree earned (i.e., AAS technical degree, technical/career certificate, university parallel AA/AS degree, or bachelor's degree).

Furthermore, additional regressions were run that are identical to those specified above except that they also include explanatory terms measuring the interaction between HELP receipt and the control variables. The results from these supplemental regressions serve to indicate whether the effect of HELP receipt differs by such factors as race and gender.

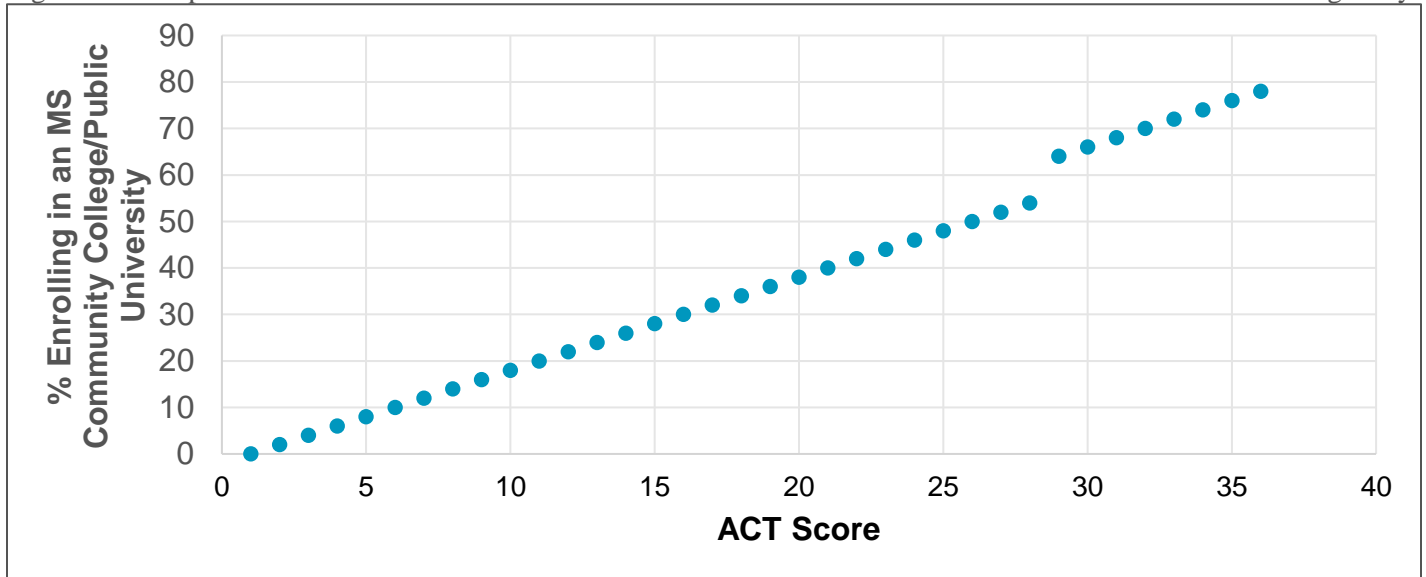
2. Does the availability of the Mississippi Eminent Scholars Grant increase in-state enrollment of high-achieving students?

Addressing this item requires comparing the postsecondary enrollment outcomes of students for whom MESG aid is available to the corresponding outcomes of students lacking any access MESG but who are otherwise similar. One approach to making such a comparison is to conduct a pretest-posttest study examining how in-state enrollment among Mississippi high school graduates with an MESG-level ACT score changed with the implementation of the MESG program. However, this design cannot be employed because MESG was introduced in 1995, well prior to the years for which ACT and postsecondary enrollment data is available in the SLDS. Another approach would be to compare the in-state enrollment rates of Mississippi high school students with an MESG-level ACT score to the in-state enrollment of students from other parts of the country who possess a similar ACT score but lack access to a program like MESG. However, the state data clearinghouse does not have data on postsecondary enrollment in other states. Furthermore, even if this data were available, it would be a challenge to identify a group of non-Mississippi students comparable to the relevant Mississippi high school students in factors affecting in-state enrollment besides financial aid.

In consideration of these issues, a third method—regression discontinuity—was used to examine whether the Mississippi Eminent Scholars Grant affects the likelihood of academically-gifted Mississippi high school graduates enrolling in Mississippi public postsecondary institutions. Regression discontinuity is an approach for evaluating the effects of a policy or program in cases where treatment status is determined by whether an individual scores above or below a particular threshold on a given measure. This type of analysis involves comparing those who achieved a score just high enough to receive treatment to those who barely scored below the threshold (or vice-versa). Since these two groups are presumably very similar in their baseline characteristics (considering how closely they scored on the measure), differences between them in the outcome of interest can be more easily interpreted as the effect of the treatment. In the present context, regression discontinuity techniques were used to examine how MESG eligibility influences in-state postsecondary enrollment among 2004-2005 through 2015-2016 graduates of Mississippi high schools. To be eligible for MESG, a student must score at least a 29 on the ACT in addition to having a high school GPA of 3.5 or more. The analysis, limited to Mississippi high school graduates meeting the GPA requirement, examined whether those who scored at or just above the ACT threshold and thus had access to MESG (the treatment group) were more likely to subsequently enroll in a Mississippi public postsecondary institution than peers who scored just below the threshold and thus could not avail themselves of MESG (the comparison group). Focusing on students who scored close to the ACT score required for MESG participation will help to ensure that the treatment and comparison groups are similar in terms of characteristics other than MESG eligibility, allowing for a more precise measurement of the program's effect on in-state enrollment.

The analysis has both descriptive and multivariate components. Following established procedures for conducting a regression discontinuity analysis (Jacob et al. 2012), the descriptive results include a graph in which the percentage of students enrolling in a Mississippi community college or Mississippi public university within one year of high school graduation is plotted by students' ACT scores. If this plot shows that the enrollment-ACT trend line shifts upward around the ACT threshold for MESG eligibility (see Figure 1 for an illustration of this), it would constitute preliminary evidence that MESG eligibility encourages the in-state enrollment of high-performing students.

Figure 1. Example of Plot in Which the Enrollment-ACT Trend Line Shifts at the ACT Threshold for MESG Eligibility



The multivariate component of the analysis was limited to students who scored within a set interval above or below the ACT threshold for MESG participation, where the size of the interval was determined using a procedure called “cross-validation.”⁴ Based on this data, a binary logistic regression was run to estimate the relationship between whether a student scored at or above the ACT threshold for MESG eligibility and whether they enrolled in a Mississippi community college or Mississippi public university within one year of graduation, controlling for other factors. The key explanatory factor is a binary variable coded 1 if the student scored at or above the ACT cutoff of 29 and coded 0 if they scored below this cutoff. The outcome variable is a binary variable coded 1 if the student enrolled in a Mississippi community college or Mississippi public university within one year of graduation, and 0 otherwise. In line with standard practice for specifying regression discontinuity models, the control variables include student’s ACT score and the interaction between student’s ACT score and MESG eligibility.

3. Do forgivable loan recipients stay in appropriate fields of employment after completing the service obligation?

Note: Direct information on whether students receiving a forgivable loan completed their service obligation is not available as data on this topic is collected and handled by an organization separate from the Mississippi Office of Student Aid. Therefore, in the analysis described below, whether students completed their service obligation was assessed by examining their post-graduation employment patterns. In particular, students whose service obligation involved teaching in a Mississippi public school for a given number of years were followed over time to determine whether they were employed as a Mississippi public school teacher for that length. For students whose service obligation involved working in other sectors, industry of employment was examined to evaluate whether they satisfied requirements.

To address this item, the employment outcomes of students who obtained a forgivable loan from the Mississippi Office of Student Financial Aid were examined. Based on discussion with the requestor, students receiving each of the following types of forgivable loan were included in the analysis: (1) William Winter Teacher/Alternate Route Teacher Forgivable Loans; (2) Nursing Education Forgivable Loans-undergraduate level; (3) Nursing Education Forgivable Loans-graduate level; and (4) the SREB Regional Contract Forgivable Loans for Optometry. The methodology that was utilized to examine the outcomes of students receiving these loans is described below.

⁴ Cross-validation is frequently used in regression discontinuity analysis to determine what range of observations should be included in measuring the association between treatment status and the outcome measure. In general, selecting a wider observation range yields estimates of greater precision because more observations are included in the analysis. However, choosing a wider range also tends to increase bias as the estimated relationship between treatment and outcome is more likely to reflect unaccounted for trends in the data. The cross-validation procedure involves calculating a statistic known as the mean square error for various potential observation intervals to identify the one that offers the best tradeoff in terms of precision and bias (Jacob et al. 2012).

William Winter Teacher/Alternate Route Teacher Forgivable Loan

William Winter Forgivable Loans are provided to students attending Mississippi universities in order to expand the supply of teachers for Mississippi public schools. To obtain one of these loans, students must be in their junior or senior year of college and in a program of study leading to a bachelor's degree and teacher licensure. William Winter loans pay up to \$4,000 per year and can be received for a maximum of two years. Recipients can fulfill the loan's service obligation and have their debt discharged by working full-time as a contracted classroom teacher in a Mississippi public school after graduation for the same number of years as they received the loan. Students who obtain the William Winter loan are given a 12-month "grace period" after graduation, at the end of which they need to either submit documentation that they are employed as a Mississippi public school teacher or begin repaying the loan.

To examine the outcomes of those receiving William Winter loans, a prospective cohort design was used in which students graduating from a university in a given year are followed over time. Five cohorts were identified for academic years 2004-2005, 2005-2006, 2006-2007, 2007-2008, and 2008-2009. Each cohort is comprised of students who graduated with a bachelor's degree from a Mississippi public university, having received a William Winter Teacher/Alternate Route Teacher Forgivable Loan during their junior and/or senior year at the university. Cohort members were followed over time to measure their employment outcomes.

The following information is provided:

1. The number graduating from a Mississippi public university with a bachelor's degree who had received a William Winter forgivable loan during at least one of the years in which they were enrolled at the university.
2. Of the graduates identified in (1), the number and percentage who fulfilled the overall teaching service obligation of the loan within the required period of time following graduation. In particular, students who had received the loan for one year and those who had received the loan for two years were followed for, respectively, two years and three years after graduation to measure whether they fulfilled the service obligation. These measurement intervals reflect that graduates were provided with a one year "grace period" to find appropriate service employment and that the length of their service obligation was equal to the number of years they received the loan.
3. Of the graduates identified in (2), the number and percentage who remained employed as a teacher in a Mississippi public school one year, two years, three years, four years, and five years after completing their service obligation.

Results are provided in total and by cohort. Cell counts less than 10 are not reported.

Nursing Education Forgivable Loan (Undergraduate Level)

Undergraduate-level Nursing Education Forgivable Loans are provided to students attending Mississippi universities in order to expand the supply of nurses in the state. To obtain a Nursing Education Forgivable Loan of this type, students must be in their junior or senior year of college and seeking a bachelor's degree in nursing. These loans pay up to \$4,000 per year and can be received for a maximum of two years. Recipients can fulfill the loan's service obligation and have their debt discharged by working in Mississippi either as a professional nurse or as a full-time teacher in an accredited nursing school for the same number of years as they received the loan. Students who obtain an undergraduate-level Nursing Education Forgivable Loan are given a 12-month "grace period" after graduation, at the end of which they need to either submit documentation that they are employed as a nurse/nursing school teacher or begin repaying the loan.

To examine the outcomes of those receiving an undergraduate-level Nursing Education Forgivable Loan, a prospective cohort design was used in which students graduating from a university in a given year are followed over time. Five cohorts were identified for academic years 2004-2005, 2005-2006, 2006-2007, 2007-2008, and 2008-2009. Each cohort is comprised of students who graduated with a bachelor's degree in nursing from a Mississippi public university, having

received an undergraduate-level Nursing Education Forgivable Loan during their junior and/or senior year at university. Cohort members were followed over time to measure their employment outcomes.

The following information is provided:

1. The number graduating from a Mississippi public university with a bachelor's in nursing who had received an undergraduate-level Nursing Education Forgivable Loan during at least one of the years in which they were enrolled at the university.
2. Of the graduates identified in (1), the number and percentage who fulfilled the overall nursing/teaching service obligation of the loan within the required period of time following graduation. In particular, students who had received the loan for one year and those who had received the loan for two years were followed for, respectively, two years and three years after graduation to measure whether they fulfilled the service obligation. These measurement intervals reflect that graduates were provided with a one year "grace period" to find appropriate service employment and that the length of their service obligation was equal to the number of years they received the loan.
3. Of the graduates identified in (2), the number and percentage who remained employed as a nurse/nursing school teacher in Mississippi one year, two years, three years, four years, and five years after completing their service obligation.

Results are provided in total and by cohort. Cell counts less than 10 are not reported.

Nursing Education Forgivable Loans (Graduate Level)

Note: As described below, graduate-level Nursing Educational Forgivable Loans are provided to both master's- and doctoral-level nursing students. To effectively measure whether and for how long both master's and doctoral nursing graduates received one of these loans, their loan receipt history was examined for up to five years of graduate school enrollment (i.e., the typical time required to obtain a doctoral degree). Given this specification and the fact that loan receipt information is only available beginning in academic year 2003-2004, the earliest cohort examined is comprised of individuals earning a graduate-level nursing degree in 2007-2008. Under these circumstances, the employment status of Nursing Education Forgivable Loan recipients was only measured for three years following completion of the service obligation (as compared to five years for the loans described above) to allow for a sufficient number of cohorts to be included in the analysis.

Graduate-level Nursing Education Forgivable Loans are provided to students attending Mississippi universities in order to expand the supply of nurses in the state. To obtain a Nursing Education Forgivable Loan of this type, students must be seeking a master's or doctoral degree in nursing. These loans pay up to \$4,000 per year to master's students and \$5,000 per year to doctoral students. They can be received for a maximum of two years both by master's students without a Mississippi nursing license and by doctoral students, and for a maximum of three years by master's students with a Mississippi nursing license. Recipients can fulfill the loan's service obligation and have their debt discharged by working in Mississippi either as a professional nurse or as a full-time teacher in an accredited nursing school for the same number of years as they received the loan. Students who obtain a graduate-level Nursing Education Forgivable Loan are given a 12-month "grace period" after graduation, at the end of which they need to either submit documentation that they are employed as a nurse/nursing school teacher or begin repaying the loan.

To examine the outcomes of those receiving a graduate-level Nursing Education Forgivable Loan, a prospective cohort design was used in which students graduating from a university in a given year are followed over time. Three cohorts were identified for academic years 2007-2008, 2008-2009, and 2009-2010. Each cohort is comprised of students who graduated with a master's or doctoral degree in nursing from a Mississippi public university, having received a graduate-level Nursing Education Forgivable Loan during at least one of the years in which they were enrolled in the university. Cohort members were followed over time to measure their employment outcomes.

The following information is provided:

1. The number graduating from a Mississippi public university with a master's or doctorate in nursing who had received a graduate-level Nursing Education Forgivable Loan during at least one of the years in which they were enrolled at the university.
2. Of the graduates identified in (1), the number and percentage who fulfilled the overall nursing/teaching service obligation of the loan within the required period of time following graduation. In particular, students who had received the loan for one, two, and three years were followed for—respectively—two, three, and four years after graduation to measure whether they fulfilled the service obligation. These measurement intervals reflect that graduates were provided with a one year “grace period” to find appropriate service employment and that the length of their service obligation was equal to the number of years they received the loan.
3. Of the graduates identified in (2), the number and percentage who remained employed as a nurse/nursing school teacher in Mississippi one year, two years, and three years after completing their service obligation.

Results are provided in total and by cohort. Cell counts less than 10 are not reported.

SREB Regional Contract Forgivable Loan for Optometry

Note: As discussed below, the SREB Regional Contract Forgivable Loan is provided to optometry students at the University of Alabama-Birmingham and the Southern College of Optometry. Since neither of these schools is a Mississippi public postsecondary institution, degree completion information is not available for recipients of the loan. As a result, graduation cohorts cannot be identified. Given this constraint, the requestor recommended that the analysis focus on students who obtained the SREB Regional Contract Forgivable Loan for four years (i.e., the maximum duration), examining their employment status subsequent to the fourth year of loan receipt. The analysis outlined below follows this recommendation. As with the graduate-level nursing loans (see above), employment patterns were only examined for three years after service obligation fulfillment, reflecting the time required for measuring aid receipt and limitations on the years of data available.

SREB Regional Contract Forgivable Loans for Optometry are provided to Mississippi-origin students attending optometry school at the University of Alabama-Birmingham or the Southern College of Optometry in order to expand the supply of optometrists in Mississippi. The amount paid by these loans is determined annually by the Southern Regional Education Board. SREB loans can be received for a maximum of four years. Recipients can fulfill the loan's service obligation and have their debt discharged by working full-time as an optometrist in Mississippi following graduation for the same number of years as they received the loan. Students who obtain a SREB Regional Contract Forgivable Loan are given a 12-month “grace period” after graduation, at the end of which they need to either submit documentation that they are employed as an optometrist in Mississippi or begin repaying the loan.

To examine the outcomes of those receiving a SREB Regional Contract Forgivable Loan, a prospective cohort design was used in which students receiving the loan in a particular year are followed over time. Three cohorts were identified for academic years 2006-2007, 2007-2008, and 2008-2009. Each cohort is comprised of students receiving the SREB Regional Contract Forgivable Loan for the fourth consecutive year. Cohort members were followed over time to measure their employment outcomes.

The following information is provided:

1. The number receiving the SREB Regional Contract Forgivable Loan for the fourth consecutive year.
2. Of the loan recipients identified in (1), the number and percentage who fulfilled the optometry service obligation of the overall loan within the required period of time. In particular, students were followed for five years after their final year of receiving the loan to measure whether they fulfilled the service obligation. This measurement interval reflects that graduates were provided with a one year “grace period” after graduation to find appropriate

service employment and that the length of their service obligation was equal to the number of years they received the loan for.

3. Of the loan recipients identified in (2), the number and percentage who remained employed as an optometrist in Mississippi one year, two years, and three years after completing their service obligation.

Results are provided in total and by cohort. Cell counts less than 10 are not reported.

RESULTS

1. **Do beneficiaries of each of the following financial aid programs experience better outcomes (i.e. persist and graduate at higher rates, find employment at higher rates, earn higher average incomes, etc.) than similar (i.e. income, race, academic prep in high school, etc.) students who do not receive aid?**
 - a. **Mississippi Tuition Assistance Grant**
 - b. **Mississippi Eminent Scholars Grant**
 - c. **Higher Education Legislative Plan for Needy Students**

Examination of Students Receiving MTAG as an Entering Degree-Seeking Freshman

Note: Table A1 in the Appendix contains descriptive statistics for students receiving MTAG as an entering degree-seeking freshman and for students in the associated comparison group. These figures indicate that the two groups are largely balanced on relevant social and academic characteristics.

Table 1 presents the numbers of students matriculating to a Mississippi community college or Mississippi public university between 2004-2005 and 2010-2011 who received MTAG during their first semester of enrollment along with the corresponding enrollment figures for students in the comparison group made up of those not receiving MTAG in their first semester. A total of 34,971 students obtained MTAG as an entering degree-seeking freshman during the study period, while there were 10,103 comparison group members who enrolled during the same interval.

Table 1. Number of Students Enrolling in a Mississippi Community College/Public University who Received MTAG as an Entering Degree-Seeking Freshman and Number of Students in the Comparison Group

Cohort	# of MTAG Students	# of Comparison Group Students ¹
2004-2005	5,129	1,879
2005-2006	5,482	1,602
2006-2007	4,749	1,135
2007-2008	4,801	1,141
2008-2009	5,308	1,191
2009-2010	4,664	1,492
2010-2011	4,838	1,662
Total	34,971	10,103

¹The comparison group figures are weighted sums that have been rounded to the nearest integer. Due to rounding, the cohort-specific results may not add up exactly to the total results.

Retention Outcomes

Table 2 displays results on the postsecondary retention of Mississippi community college/public university students receiving MTAG as an entering degree-seeking freshmen and of their comparison group peers comprised of individuals not receiving MTAG. The results show that a higher share of MTAG students than comparison group students (88.3% vs. 79.4%) remained a student at a Mississippi public postsecondary institution one year after initial enrollment.

Table 2. Postsecondary Retention of Students Receiving MTAG as an Entering Degree-Seeking Freshman and Comparison Group Students

Cohort	MTAG Recipients Retained as an MS Community/Public University Student 1 Year after Enrollment		Comparison Group Members Retained as an MS Community College/Public University Student 1 Year after Enrollment	
	#	% ¹	# ²	% ³
2004-2005	4,376	85.32	1,417	75.41
2005-2006	4,726	86.21	1,236	77.16
2006-2007	4,227	89.01	912	80.38
2007-2008	4,274	89.02	938	82.22
2008-2009	4,762	89.71	966	81.07
2009-2010	4,188	89.79	1,211	81.16
2010-2011	4,342	89.75	1,345	80.90
Total	30,895	88.34	8,025	79.43

¹ Denominator is the total number of students receiving MTAG as an entering degree-seeking freshman in the respective cohort.

² The comparison group figures are weighted sums that have been rounded to the nearest integer. Due to rounding, the cohort-specific results may not add up exactly to the total results.

³ Denominator is the total number of comparison group students in the respective cohort. These percentages may not exactly equal the quotients of the reported numerators and denominators because the latter are displayed rounded to the nearest integer.

Table 3 shows results from the regression of postsecondary retention conducted for students receiving MTAG as an entering degree-seeking freshman and comparison group students not receiving MTAG their first semester. The estimates indicate that MTAG students had 91% higher odds than comparison group peers of remaining enrolled in a Mississippi community college/public university one year after initial enrollment, controlling for other factors.

Regarding the control variables, black students (relative to white peers), students with a higher expected family contribution, students with a higher cumulative high school GPA or ACT score, students receiving MESG, and students who initially enrolled in a Mississippi public university were estimated to have significantly higher odds of retention.

Table 3. Binary Logistic Regression Results for the Postsecondary Retention of Students Receiving MTAG as an Entering Degree-Seeking Freshman and Comparison Group Students

Effect	B	SE	Odds Ratio
Intercept	-2.47***	0.18	0.08
Received MTAG	0.65***	0.03	1.91
Gender (Male as Reference)			
Female	0.07	0.04	1.07
Race (White as Reference)			
Black	0.29***	0.05	1.33
Other Race	0.00	0.09	1.00
Log of Expected Family Contribution (\$)	0.04***	0.01	1.04
Cumulative High School GPA	0.71***	0.05	2.03
ACT Score	0.03***	0.01	1.03
Received MESG	0.56**	0.20	1.75
Received HELP	-0.40	0.24	0.67
Initial Institution Category (Community College as Reference)			
Four-Year University	0.69***	0.06	2.00
Cohort (2004-2005 as Reference)			
2005-2006	0.14*	0.06	1.15
2006-2007	0.29***	0.07	1.34
2007-2008	0.37***	0.07	1.45
2008-2009	0.39***	0.06	1.48
2009-2010	0.33***	0.07	1.39
2010-2011	0.34***	0.06	1.40

Note: *p<0.05; **p<0.01; ***p<0.001 (two-tailed test)

Table 4 reports the predicted probability of the average student being retained at a Mississippi community college or Mississippi public university one year after initial enrollment assuming they did not receive MTAG and assuming that they did. These figures were calculated based on the regression estimates shown in Table 3. The results indicate that receiving MTAG increases the probability that a student is retained from 75.0% to 85.2% - a difference of 10.2 percentage points.

Table 4. Predicted Probability of Postsecondary Retention by Whether Student Received MTAG as an Entering Degree-Seeking Freshman¹

Did Not Receive MTAG	Did Receive MTAG	Difference
74.99%	85.17%	+10.18

¹In calculating each of the predicted probabilities, all the continuous control variables (e.g., ACT score) were set equal to their mean and all of the categorical control variables (e.g., gender) were set equal to the category with the largest number of observations.

Degree Attainment Outcomes

Table 5 presents results on degree attainment for Mississippi community college/public university students receiving MTAG as an entering degree-seeking freshman and for students in the comparison group. The results show that 69.5% of MTAG students earned a degree from a Mississippi public postsecondary institution within six years of initial enrollment, compared to 58.2% of comparison group members.

Table 5. Six-Year Degree Attainment Levels of Students Receiving MTAG as an Entering Degree-Seeking Freshman and Comparison Group Students

Cohort	MTAG Recipients Earning an MS Community College/Public University Degree or Certificate		Comparison Group Members Earning an MS Community College/Public University Degree or Certificate	
	#	% ¹	# ²	% ³
2004-2005	3,690	71.94	1,095	58.27
2005-2006	3,787	69.08	939	58.62
2006-2007	3,255	68.54	668	58.84
2007-2008	3,237	67.42	625	54.76
2008-2009	3,595	67.73	650	54.58
2009-2010	3,296	70.67	908	60.84
2010-2011	3,438	71.06	997	60.00
Total	24,298	69.48	5,882	58.22

¹ Denominator is the total number of students receiving MTAG as an entering degree-seeking freshman in the respective cohort.

² The comparison group figures are weighted sums that have been rounded to the nearest integer. Due to rounding, the cohort-specific results may not add up exactly to the total results.

³ Denominator is the total number of comparison group students in the respective cohort. These percentages may not exactly equal the quotients of the reported numerators and denominators because the latter are displayed rounded to the nearest integer.

Table 6 displays results from the regression of degree attainment conducted for students receiving MTAG as an entering degree-seeking freshman and comparison group students. The estimates indicate that MTAG students had 62% higher odds than peers in the comparison group of earning a degree from a Mississippi public postsecondary institution within six years of initial enrollment, controlling for other factors.

Regarding the control variables, female students, white students (compared to other race peers), students with a higher expected family contribution, students with a higher cumulative high school GPA or ACT score, students receiving MESG, and students initially enrolling in a Mississippi public university were estimated to have significantly higher odds of earning a degree.

Table 6. Binary Logistic Regression Results for Degree Attainment within Six Years of Students Receiving MTAG as an Entering Degree-Seeking Freshman and Comparison Group Students

Effect	B	SE	Odds Ratio
Intercept	-4.34***	0.14	0.01
Received MTAG	0.48***	0.03	1.62
Gender (Male as Reference)			
Female	0.24***	0.03	1.28
Race (White as Reference)			
Black	0.03	0.04	1.03
Other Race	-0.27***	0.07	0.76
Log of Expected Family Contribution (\$)	0.08***	0.01	1.08
Cumulative High School GPA	1.06***	0.04	2.90
ACT Score	0.01*	0.01	1.01
Received MESG	0.61***	0.10	1.84
Received HELP	0.22	0.18	1.24
Initial Institution Category (Community College as Reference)			
Four-Year University	0.23***	0.04	1.25
Cohort (2004-2005 as Reference)			
2005-2006	-0.01	0.05	0.99
2006-2007	-0.09	0.05	0.92
2007-2008	-0.18***	0.05	0.83
2008-2009	-0.15**	0.05	0.86
2009-2010	-0.04	0.05	0.96
2010-2011	-0.03	0.05	0.97

Note: *p<0.05; **p<0.01; ***p<0.001 (two-tailed test)

Table 7 reports the predicted probability of the average student earning a degree/certificate from a Mississippi public postsecondary institution within six years assuming they did not receive MTAG and assuming that they did. These figures were calculated based on the regression estimates shown in Table 6. The results indicate that receiving MTAG increases the probability that a student obtains a degree from 58.4% to 69.4%, a difference of 11.0 percentage points.

Table 7. Predicted Probability of Degree Attainment by Whether Student Received MTAG as an Entering Degree-Seeking Freshman¹

Did Not Receive MTAG	Did Receive MTAG	Difference
58.44%	69.44%	+11.00

¹In calculating each of the predicted probabilities, all the continuous control variables (e.g., ACT score) were set equal to their mean and all of the categorical control variables (e.g., gender) were set equal to the category with the largest number of observations.

Table 8 shows the distribution of Mississippi community college/public university graduates by type of degree earned both for students who had received MTAG as an entering degree-seeking freshman and for the comparison group. The share of MTAG graduates obtaining a bachelor's degree (64.3%) was somewhat larger than the share of comparison group graduates that obtained a bachelor's degree (59.7%), whereas differences were more limited in the case of AAS/technical degrees (12.7% vs. 13.7%), technical/career certificates (3.3% vs. 4.9%), and AA/AS degrees (19.8% vs. 21.7%).

Table 8. Distributions by Degree Earned of Students Receiving MTAG as an Entering Degree-Seeking Freshman and Comparison Group Students who Graduated from a Mississippi Community College/Public University

Cohort	MTAG Recipients								Comparison Group Members							
	AAS/Technical Degree		Technical Career Certificate		AA/AS		Bachelor's		AAS/Technical Degree		Technical Career Certificate		AA/AS		Bachelor's	
	#	% ¹	#	% ¹	#	% ¹	#	% ¹	# ²	% ³	# ²	% ³	# ²	% ³	# ²	% ³
2004-2005	584	15.83	107	2.90	519	14.07	2,480	67.21	197	17.98	62	5.62	206	18.81	631	57.59
2005-2006	508	13.41	140	3.70	756	19.96	2,383	62.93	145	15.47	62	6.58	202	21.50	530	56.45
2006-2007	419	12.87	93	2.86	641	19.69	2,102	64.58	89	13.25	32	4.75	109	16.33	438	65.66
2007-2008	419	12.94	99	3.06	662	20.45	2,057	63.55	85	13.56	20	3.24	144	23.02	376	60.17
2008-2009	447	12.43	129	3.59	738	20.53	2,281	63.45	82	12.67	29	4.41	163	25.00	377	57.92
2009-2010	349	10.59	106	3.22	697	21.15	2,144	65.05	100	11.04	44	4.80	225	24.73	540	59.44
2010-2011	368	10.70	116	3.37	788	22.92	2,166	63.00	110	11.00	37	3.75	231	23.14	620	62.11
Total	3,094	12.73	790	3.25	4,801	19.76	15,613	64.26	808	13.73	285	4.85	1,279	21.74	3,511	59.69

¹ Denominator is the total number of students receiving MTAG as an entering degree-seeking freshman in the respective cohort who earned a degree/certificate from a Mississippi community college or Mississippi public university within six years of enrollment.

² The comparison group figures are weighted sums that have been rounded to the nearest integer. Due to rounding, the cohort-specific results may not add up exactly to the total results.

³ Denominator is the total number of comparison group students in the respective cohort who earned a degree/certificate from a Mississippi community college or Mississippi public university within six years of enrollment. These percentages may not exactly equal the quotients of the reported numerators and denominators because the latter are displayed rounded to the nearest integer.

Employment and Earnings Outcomes

Table 9 displays the employment and earnings levels of Mississippi community/college public university graduates who received MTAG as an entering degree-seeking freshman and of their counterparts in the comparison group. Among MTAG recipients completing a degree or certificate, 77.8% assumed a job in Mississippi within one year, making \$31,103 on average. The corresponding figures for the comparison group were 75.2% and \$30,267.

Table 9. Employment and Earnings of Students Receiving MTAG as an Entering Degree-Seeking Freshman and Comparison Group Students who Graduated from a Mississippi Community College/Public University

Cohort	MTAG Recipients Employed within One Year			Comparison Group Members Employed within One Year		
	#	% ¹	Avg. Earnings (\$)	# ²	% ³	Avg. Earnings (\$)
2004-2005	2,107	80.42	32,682	614	78.64	32,288
2005-2006	2,062	79.34	30,682	516	77.62	30,291
2006-2007	1,722	76.74	30,917	361	74.13	29,019
2007-2008	1,739	77.74	30,040	321	72.35	28,854
2008-2009	1,921	76.17	29,768	346	71.79	28,337
2009-2010	1,762	76.64	31,485	476	75.43	28,939
2010-2011	1,852	77.04	31,922	534	73.64	32,104
Total	13,165	77.78	31,103	3,169	75.17	30,267

¹ Denominator is the number of students receiving MTAG as an entering degree-seeking freshman in the respective cohort who earned a degree/certificate from a Mississippi community college or Mississippi public university within six years of enrollment and did not re-enroll in a Mississippi public postsecondary institution.

² The comparison group figures are weighted sums that have been rounded to the nearest integer. Due to rounding, the cohort-specific results may not add up exactly to the total results.

³ Denominator is the number of comparison group students in the respective cohort who earned a degree/certificate from a Mississippi community college or Mississippi public university within six years of enrollment and did not immediately re-enroll in a Mississippi public postsecondary institution. These percentages may not exactly equal the quotients of the reported numerators and denominators because the latter are displayed rounded to the nearest integer.

Table 10 presents the employment and earnings levels of Mississippi community college/public university graduates by type of degree earned both for students who received MTAG as an entering degree-seeking freshman and for the comparison group. The employment levels of MTAG and comparison group graduates were quite similar among those completing an AAS/technical degree (88.8 vs. 87.4%) and an AA/AS degree (73.9 vs. 72.6%). However, MTAG graduates were somewhat more likely than comparison group peers to be employed among those earning technical/career certificates (87.8 vs. 83.5%) and bachelor's degrees (75.5 vs. 72.0%). The average earnings of MTAG and comparison group graduates were close among those obtaining an AAS/technical degree (\$36,462 vs. \$35,340), a technical/career certificate (\$28,039 vs. \$28,945), an AA/AS degree (\$21,907 vs. \$22,843), and a bachelor's (\$31,327 vs. \$30,278).

Table 10. Employment and Earnings by Degree Type among Students Receiving MTAG as an Entering Degree-Seeking Freshman and Comparison Group Students who Graduated from a Mississippi Community College/Public University

MTAG Recipients Employed within One Year				Comparison Group Members Employed within One Year			
Cohort	#	% ¹	Avg. Earnings (\$)	# ²	% ³	Avg. Earnings (\$)	
AAS/Technical Degree							
2004-2005	466	92.46	39,417	153	90.17	35,663	
2005-2006	378	89.57	35,261	112	89.17	38,590	
2006-2007	298	88.17	37,339	65	89.32	34,590	
2007-2008	308	87.50	35,740	60	87.49	34,844	
2008-2009	324	88.28	34,981	60	81.29	35,157	
2009-2010	263	86.23	36,529	68	81.35	34,257	
2010-2011	279	87.46	34,419	83	88.72	32,145	
Total	2,316	88.84	36,462	602	87.41	35,340	
Technical/Career Certificate							
2004-2005	80	88.89	29,367	39	81.28	31,086	
2005-2006	97	86.61	28,831	41	83.55	29,342	
2006-2007	58	90.63	27,237	21	86.23	28,475	
2007-2008	73	92.41	28,439	16	87.88	26,658	
2008-2009	95	86.36	26,094	20	90.68	31,202	
2009-2010	67	83.75	28,292	24	77.06	25,737	
2010-2011	77	87.50	28,007	23	83.44	28,435	
Total	547	87.80	28,039	184	83.51	28,945	
AA/AS							
2004-2005	188	76.73	21,822	77	84.10	24,040	
2005-2006	278	75.34	23,645	75	79.01	20,221	
2006-2007	233	74.92	21,235	48	78.90	22,495	
2007-2008	218	72.91	20,723	44	62.15	26,885	
2008-2009	243	71.68	21,656	55	76.36	19,250	
2009-2010	213	74.48	21,469	69	65.99	21,102	
2010-2011	245	72.06	22,330	75	64.87	26,508	
Total	1,618	73.92	21,907	444	72.58	22,843	
Bachelor's							
2004-2005	1,373	77.09	31,691	345	73.17	32,658	
2005-2006	1,309	77.18	30,801	288	72.86	29,235	
2006-2007	1,133	74.00	30,978	227	68.98	28,580	
2007-2008	1,140	75.65	30,143	201	70.25	27,355	
2008-2009	1,259	73.80	30,122	211	67.16	28,117	
2009-2010	1,219	74.88	32,138	315	76.51	29,704	
2010-2011	1,251	75.50	33,281	352	72.27	33,400	
Total	8,684	75.47	31,327	1,939	71.95	30,278	

¹ Denominator is the number of students receiving MTAG as an entering degree-seeking freshman in the respective cohort who earned a degree/certificate of the specified type from a Mississippi community college or Mississippi public university within six years of enrollment and did not re-enroll in a Mississippi public postsecondary institution.

² The comparison group figures are weighted sums that have been rounded to the nearest integer. Due to rounding, the cohort-specific results may not add up exactly to the total results.

³ Denominator is the number of comparison group students in the respective cohort who earned a degree/certificate of the specified type from a Mississippi community college or Mississippi public university within six years of enrollment and did not immediately re-enroll in a Mississippi public postsecondary institution. These percentages may not exactly equal the quotients of the reported numerators and denominators because the latter are displayed rounded to the nearest integer.

Table 11 displays results from the regression of employment status conducted for students receiving MTAG as an entering degree-seeking freshman and comparison group students who had graduated from a Mississippi community college/public university within six years. The estimates indicate that the MTAG graduates had 17% higher odds than their peers in the comparison group of assuming a job in Mississippi within one year of degree receipt, after controlling for other factors.

Regarding the control variables, female graduates, white graduates (relative to graduates of some other race), graduates with a lower high school GPA or ACT score, graduates who had not received MESH, and graduates who had initially enrolled in a Mississippi community college were estimated to have significantly higher odds of entering the Mississippi workforce. In addition, the results indicate graduates who received a bachelor's degree were significantly more likely to

assume employment in the state than peers who received an AA/AS, but were significantly less likely to do so than peers who received an AAS/technical degree. The negative employment effects estimated for high school GPA, ACT score, and MESG receipt may be due to a tendency for higher-achieving graduates to leave Mississippi for a job or to attend graduate school.

Table 11. Binary Logistic Regression Results for Employment of Students Receiving MTAG as an Entering Degree-Seeking Freshman and Comparison Group Students within One Year of Graduating from a Mississippi Community College/Public University

Effect	B	SE	Odds Ratio
Intercept	2.92***	0.28	18.59
Received MTAG	0.15**	0.05	1.17
Gender (Male as Reference)			
Female	0.36***	0.05	1.43
Race (White as Reference)			
Black	-0.05	0.07	0.95
Other Race	-0.32*	0.14	0.73
Log of Expected Family Contribution (\$)	-0.03	0.02	0.97
High School GPA	-0.17*	0.07	0.85
ACT Score	-0.04***	0.01	0.96
Received MESG	-0.56***	0.12	0.57
Received HELP	-0.12	0.23	0.89
Initial Institution Category (Community College as Reference)			
Four-Year University	-0.53***	0.06	0.59
Degree Earned (Bachelor's as Reference)			
AAS Technical Degree	0.45***	0.08	1.57
Technical/Career Certificate	0.14	0.13	1.15
AA/AS	-0.52***	0.07	0.60
Cohort (2004-2005 as Reference)			
2005-2006	-0.04	0.09	0.97
2006-2007	-0.14	0.10	0.87
2007-2008	-0.15	0.09	0.86
2008-2009	-0.21*	0.09	0.81
2009-2010	-0.08	0.10	0.93
2010-2011	-0.12	0.09	0.88

Note: *p<0.05; **p<0.01; ***p<0.001 (two-tailed test)

Table 12 reports the predicted probability of the average student taking a job in Mississippi within one year of graduation assuming they did not receive MTAG and assuming that they did. These figures were calculated based on the regression estimates shown in Table 11. The results indicate that receiving MTAG increases the probability that a student enters the state workforce from 82.8% to 84.8%, a difference of 2.0 percentage points.

Table 12. Predicted Probability of Employment following Graduation by Whether Student Received MTAG as an Entering Degree-Seeking Freshman¹

Did Not Receive MTAG	Did Receive MTAG	Difference
82.77%	84.81%	+2.04

¹In calculating each of the predicted probabilities, all the continuous control variables (e.g., ACT score) were set equal to their mean and all of the categorical control variables (e.g., gender) were set equal to the category with the largest number of observations.

Table 13 shows results from the ordinary least squares (OLS) regression of earnings conducted for students receiving MTAG as an entering degree-seeking freshman and comparison group students who had graduated from a Mississippi community college/public university and subsequently assumed a job in Mississippi. The estimates indicate that MTAG graduates had 4% higher earnings than their peers in the comparison group, after controlling for other factors.

Regarding the control variables, male graduates, white graduates (relative to black peers), graduates with a higher cumulative high school GPA, and graduates who did not receive MESG were estimated to have significantly higher earnings. Furthermore, the results indicate that graduates who obtained a bachelor's earned significantly more than peers who obtained an AA/AS, but significantly less than those that obtained an AAS/technical degree.

Table 13. OLS Regression Results for Earnings of Students Receiving MTAG as an Entering Degree-Seeking Freshman and Comparison Group Students Who Assumed a Job in MS within One Year of Graduating from a Mississippi Community College/Public University

Effect	B	SE	Exp(B)
Intercept	9.82***	0.09	18,329.44
Received MTAG	0.04*	0.02	1.04
Gender (Male as Reference)			
Female	-0.07***	0.02	0.94
Race (White as Reference)			
Black	-0.16***	0.02	0.85
Other Race	0.00	0.04	1.00
Log of Expected Family Contribution (\$)	0.00	0.01	1.00
Cumulative High School GPA	0.12***	0.02	1.13
ACT Score	0.00	0.00	1.00
Received MESG	-0.16*	0.06	0.86
Received HELP	-0.08	0.07	0.93
Initial Institution Category (Community College as Reference)			
Four-Year University	-0.03	0.02	0.97
Degree Earned (Bachelor's as Reference)			
AAS Technical Degree	0.16***	0.02	1.17
Technical/Career Certificate	-0.02	0.03	0.98
AA/AS	-0.43***	0.03	0.65
Cohort (2004-2005 as Reference)			
2005-2006	-0.06**	0.02	0.94
2006-2007	-0.09***	0.03	0.91
2007-2008	-0.08**	0.02	0.92
2008-2009	-0.13***	0.03	0.88
2009-2010	-0.08**	0.03	0.92
2010-2011	-0.05	0.03	0.95

Note: *p<0.05; **p<0.01; ***p<0.001 (two-tailed test)

Table 14 reports the predicted earnings of the average student taking a job in Mississippi within one year of graduation assuming they did not receive MTAG and assuming that they did. These figures were calculated based on the regression results shown in Table 13. The results indicate that receiving MTAG increases a student's earnings from \$25,828 to \$26,882, a difference of \$1,054.

Table 14. Predicted Earnings in Post-Graduation Employment by Whether Students Received MTAG as an Entering Degree-Seeking Freshman¹

Did Not Receive MTAG	Did Receive MTAG	Difference
\$25,828	\$26,882	+\$1,054

¹In calculating each of the predicted probabilities, all the continuous control variables (e.g., ACT score) were set equal to their mean and all of the categorical control variables (e.g., gender) were set equal to the category with the largest number of observations.

Examination Students Receiving MTAG while Enrolled in College

Note: Table A2 in the Appendix contains descriptive statistics for students receiving MTAG as a current college student and for students in the associated comparison group. These figures indicate that the two groups are largely balanced on relevant social and academic characteristics.

Table 15 presents the numbers of Mississippi community college/public university students who received MTAG for the first time in 2011-2012 as a current college student (i.e., in their second through sixth year of continuous enrollment in a Mississippi public postsecondary institution) as well as the numbers of students in the comparison group not receiving MTAG during 2011-2012 or a prior year. The results show that a total of 1,044 non-freshman students began receiving MTAG in 2011-2012, while there were 1,819 students in the comparison group.

Table 15. Number of Students Enrolled in a Mississippi Community College/Public University in 2011-2012 Who Began Receiving MTAG That Year as a Current College Student and Number of Students in the Comparison Group

Year of Continuous Enrollment in an MS Community College/Public University as of 2011-2012	# of Students Receiving MTAG for the First Time	# of Students in Comparison Group ¹
6 th year	<10	14
5 th year	24	48
4 th year	52	164
3 rd year	262	470
2 nd year	701	1,123
Total	1,044	1,819

¹The comparison group figures are weighted sums that have been rounded to the nearest integer. Due to rounding, the cohort-specific results may not add up exactly to the total results.

Degree Attainment Outcomes

Table 16 displays results on degree attainment for Mississippi community college/public university students who began receiving MTAG as a current college student in 2011-2012 and for students in the comparison group. The results show that the rate at which the MTAG students earned degrees/certificates from Mississippi public postsecondary institutions within six years (81.8%) was higher than that of comparison group students (75.4%).

Table 16. Six-Year Degree Attainment Levels of Students Receiving MTAG while Currently Enrolled and Comparison Group Students

Year of Continuous Enrollment in an MS Community College/Public University as of 2011-2012	MTAG Recipients Earning an MS Community College/Public University Degree or Certificate		Comparison Group Members Earning an MS Community College/Public University Degree or Certificate	
	#	% ¹	# ²	% ³
6 th year	<10	-	<10	-
5 th year	23	95.83	39	82.29
4 th year	48	92.31	149	90.58
3 rd year	216	82.44	365	77.60
2 nd year	566	80.74	810	72.14
Total	854	81.80	1,371	75.35

¹ Denominator is the total number of students receiving MTAG as a current college student in the respective cohort.

² The comparison group figures are weighted sums that have been rounded to the nearest integer. Due to rounding, the cohort-specific results may not add up exactly to the total results.

³ Denominator is the total number of comparison group students in the respective cohort. These percentages may not exactly equal the quotients of the reported numerators and denominators because the latter are displayed rounded to the nearest integer.

Table 17 shows results from the regression of degree attainment conducted for students receiving MTAG as a current college student and for comparison group students. The estimates indicate that the MTAG students had 53% higher odds than peers in the comparison group of earning a degree from a Mississippi public postsecondary institution within six years of initial enrollment, controlling for other factors.

Regarding the control variables, female students, students with a higher cumulative college GPA, and students who had initially enrolled in a Mississippi public university were estimated to have significantly higher odds of completing a degree.

Table 17. Binary Logistic Regression Results for Degree Attainment within Six Years of Students Receiving MTAG While Currently Enrolled and Comparison Group Students¹

Effect	B	SE	Odds Ratio
Intercept	-2.89***	0.54	0.06
Received MTAG	0.42***	0.11	1.53
Gender (Male as Reference)			
Female	0.52***	0.10	1.68
Race (White as Reference)			
Black	0.17	0.14	1.19
Other Race	-0.07	0.24	0.93
Log of Expected Family Contribution (\$)	0.05	0.03	1.05
Cumulative College GPA	1.03***	0.13	2.80
Initial Institution Category (Community College as Reference)			
Four-Year University	0.78***	0.23	2.18
Current Institution Category (Community College as Reference)			
Four-Year University	-0.19	0.19	0.83
Year of Enrollment as of 2011-2012 (6th and 5th as Reference)²			
4 th	1.11**	0.40	3.03
3 rd	0.08	0.33	1.09
2 nd	-0.28	0.32	0.76

¹Regression does not include either MESG receipt or HELP receipt as a predictor variable because of low cell counts.

²Students who were in their sixth or fifth year of continuous enrollment at a Mississippi community college/public university are treated as the reference category because there were too few individuals in their sixth year of enrollment to treat as a separate category.

Note: *p<0.05; **p<0.01; ***p<0.001 (two-tailed test)

Table 18 reports the predicted probability of the average student earning a degree/certificate from a Mississippi public postsecondary institution within six years, assuming they did not receive MTAG and assuming that they did. These figures were calculated based on the regression estimates shown in Table 17. The results indicate that receiving MTAG increases the probability that a student obtains a degree from 73.7% to 81.0%, a difference of 7.3 percentage points.

Table 18. Predicted Probability of Degree Attainment by Whether Student Received MTAG While Currently Enrolled¹

Did Not Receive MTAG	Did Receive MTAG	Difference
73.67%	80.98%	+7.31

¹In calculating each of the predicted probabilities, all the continuous control variables (e.g., ACT score) were set equal to their mean and all of the categorical control variables (e.g., gender) were set equal to the category with the largest number of observations.

Table 19 presents the distribution of Mississippi community/public university graduates by type of degree earned both for students who had received MTAG as a current college student and for the comparison group. The share of MTAG graduates obtaining an AAS/technical degree (20.3%) was somewhat larger than the share of comparison group graduates that obtained an AAS/technical degree (16.6%), whereas differences were more limited the case of technical/career certificates (4.2% vs. 3.6%), AA/AS degrees (22.1% vs. 24.3%), and bachelor's degrees (53.4% vs. 55.5%).

Table 19. Distributions by Degree Earned of Students Receiving MTAG While Currently Enrolled and Comparison Group Students Who Graduated from a Mississippi Community College/Public University

Year of Continuous Enrollment in an MS Community College/Public University as of 2011-2012	MTAG Recipients								Comparison Group							
	AAS/Technical Degree		Technical Career Certificate		AA/AS		Bachelor's		AAS/Technical Degree		Technical Career Certificate		AA/AS		Bachelor's	
	#	% ¹	#	% ¹	#	% ¹	#	% ¹	# ²	% ³	# ²	% ³	# ²	% ³	# ²	% ³
6 th year	<10	-	<10	-	<10	-	<10	-	<10	-	<10	-	<10	-	<10	-
5 th year	<10	-	<10	-	<10	-	18	78.26	<10	-	<10	-	<10	-	28	71.93
4 th year	<10	-	<10	-	<10	-	38	79.17	18	11.77	<10	-	17	11.33	110	74.09
3 rd year	48	22.22	<10	-	48	22.22	118	54.63	69	18.85	<10	-	95	26.06	192	52.65
2 nd year	117	20.67	33	5.83	135	23.85	281	49.65	133	16.41	37	4.51	218	26.95	422	52.12
Total	173	20.26	36	4.22	189	22.13	456	53.40	228	16.63	50	3.62	333	24.28	760	55.47

¹ Denominator is the total number of students receiving MTAG while enrolled in college in the respective cohort who earned a degree/certificate from a Mississippi community college or Mississippi public university within six years of enrollment.

² The comparison group figures are weighted sums that have been rounded to the nearest integer. Due to rounding, the cohort-specific results may not add up exactly to the total results.

³ Denominator is the total number of comparison group students in the respective cohort who earned a degree/certificate from a Mississippi community college or Mississippi public university within six years of enrollment. These percentages may not exactly equal the quotients of the reported numerators and denominators because the latter are displayed rounded to the nearest integer.

Employment and Earnings Outcomes

Table 20 displays the employment and earnings levels of Mississippi community/college public university graduates who started receiving MTAG while enrolled in college and of their counterparts in the comparison group. Among MTAG recipients completing a degree or certificate, 77.4% assumed a job in Mississippi within one year, making \$31,788 on average. The corresponding figures for the comparison group were 74.8% and \$31,383.

Table 20. Employment and Earnings of Students Receiving MTAG while Currently Enrolled and Comparison Group Students Who Graduated from a Mississippi Community College/Public University

Year of Continuous Enrollment in an MS Community College/Public University as of 2011-2012	MTAG Recipients Employed within One Year			Comparison Group Members Employed within One Year		
	#	%	Avg. Earnings (\$)	#	%	Avg. Earnings (\$)
6th year	<10	-	-	<10	-	-
5th year	12	66.67	32,554	27	78.1	30,986
4th year	30	75	28,641	88	75.45	29,187
3rd year	118	73.75	32,641	206	80.17	32,760
2nd year	331	79.57	31,746	418	71.85	31,306
Total	491	77.44	31,788	744	74.77	31,383

¹ Denominator is the number of students receiving MTAG while currently enrolled in the respective cohort who earned a degree/certificate from a Mississippi community college or Mississippi public university within six years of enrollment and did not re-enroll in a Mississippi public postsecondary institution.

² The comparison group figures are weighted sums that have been rounded to the nearest integer. Due to rounding, the cohort-specific results may not add up exactly to the total results.

³ Denominator is the number of comparison group students in the respective cohort who earned a degree/certificate from a Mississippi community college or Mississippi public university within six years of enrollment and did not immediately re-enroll in a Mississippi public postsecondary institution. These percentages may not exactly equal the quotients of the reported numerators and denominators because the latter are displayed rounded to the nearest integer.

Table 21 displays the employment and earnings levels of Mississippi community college/public university graduates by type of degree earned both for students who received MTAG as a current college student and for the comparison group. The employment levels of MTAG and comparison group graduates were similar among those completing an AAS/technical degree (84.0 vs. 82.7%) and a bachelor's (75.4 vs. 74.4%). However, an appreciably lower share of MTAG graduates than comparison group graduates entered the Mississippi workforce among those who obtained a technical/career certificate (80.0% vs. 88.9%), whereas the opposite was true among those that obtained an AA/AS (74.2% vs. 63.0%). With respect to pay, the average annualized earnings of MTAG graduates were somewhat higher than those of comparison group graduates among individuals obtaining an AAS/technical degree (\$34,693 vs. \$32,551) or an AA/AS (\$26,211 vs. \$22,825). Nevertheless, compensation levels were similar in the case of technical/career certificate (\$29,552 vs. \$28,445) and bachelor's degree (\$31,892 vs. \$33,034) recipients.

Table 21. Employment and Earnings by Degree Type among Students Receiving MTAG while Currently Enrolled and Comparison Group Students Who Graduated from a Mississippi Community College/Public University

Year of Continuous Enrollment in an MS Community College/Public University as of 2011-2012	MTAG Recipients Employed within One Year			Comparison Group Members Employed within One Year		
	#	% ¹	Avg. Earnings (\$)	# ²	% ³	Avg. Earnings (\$)
AAS/Technical Degree						
6 th year	<10	-	-	<10	-	-
5 th year	<10	-	-	<10	-	-
4 th year	<10	-	-	15	89.40	32,548
3 rd year	31	83.78	36,676	44	78.51	35,520
2 nd year	88	83.81	33,151	98	82.54	31,257
Total	126	84.00	34,693	165	82.71	32,551
Technical/Career Certificate						
6 th year	<10	-	-	<10	-	-
5 th year	<10	-	-	<10	-	-
4 th year	<10	-	-	<10	-	-
3 rd year	<10	-	-	<10	-	-
2 nd year	22	81.48	28,583	23	83.58	29,498
Total	24	80.00	29,552	36	88.91	28,445
AA/AS						
6 th year	<10	-	-	<10	-	-
5 th year	<10	-	-	<10	-	-
4 th year	<10	-	-	<10	-	-
3 rd year	16	66.67	24,481	28	64.46	22,352
2 nd year	52	77.61	26,753	68	60.50	22,840
Total	69	74.19	26,211	103	63.01	22,825
Bachelor's						
6 th year	<10	-	-	<10	-	-
5 th year	10	62.50	30,208	19	71.26	30,861
4 th year	23	74.19	24,164	61	70.22	28,825
3 rd year	70	72.16	32,550	126	84.13	34,566
2 nd year	169	77.88	32,801	230	70.90	33,714
Total	272	75.35	31,892	439	74.40	33,034

¹ Denominator is the total number of students receiving MTAG while enrolled in college in the respective cohort who earned a degree/certificate of the specified type from a Mississippi community college or Mississippi public university within six years of enrollment and did not re-enroll in a Mississippi public postsecondary institution.

² The comparison group figures are weighted sums that have been rounded to the nearest integer. Due to rounding, the cohort-specific results may not add up exactly to the total results.

³ Denominator is the total number of comparison group students in the respective cohort who earned a degree/certificate of the specified type from a Mississippi community college or Mississippi public university within six years of enrollment and did not immediately re-enroll in a Mississippi public postsecondary institution. These percentages may not exactly equal the quotients of the reported numerators and denominators because the latter are displayed rounded to the nearest integer.

Table 22 shows results from the regression of employment status conducted for students receiving MTAG as a current college student and comparison group students who had graduated from a Mississippi community college/public university within six years. The estimates indicate that MTAG graduates were not significantly different from peers in the comparison group in their odds of assuming a job in Mississippi within one year of degree receipt, after controlling for other factors.

Regarding the control variables, graduates who had earned a bachelor's degree (relative to those earning an AA/AS) were estimated to have significantly higher odds of entering the Mississippi workforce.

Table 22. Binary Logistic Regression Results for Employment of Students Receiving MTAG While Currently Enrolled and Comparison Group Students within One Year of Graduating from a Mississippi Community College/Public University¹

Effect	B	SE	Odds Ratio
Intercept	2.35***	0.70	10.44
Received MTAG	0.13	0.14	1.14
Gender (Male as Reference)			
Female	0.10	0.14	1.11
Race (White as Reference)			
Black	0.09	0.20	1.09
Other Race	-0.19	0.35	0.83
Log of Expected Family Contribution (\$)	-0.01	0.03	0.99
Cumulative College GPA	-0.30	0.17	0.74
Initial Institution Category (Community College as Reference)			
Four-Year University	-0.41	0.27	0.66
Current Institution Category (Community College as Reference)			
Four-Year University	-0.27	0.28	0.76
Degree Earned (Bachelor's as Reference)			
AAS Technical Degree	0.21	0.21	1.23
Technical/Career Certificate	0.23	0.37	1.26
AA/AS	-0.63**	0.20	0.53
Year of Enrollment as of 2011-2012 (6th and 5th as Reference)²			
4 th	0.03	0.40	1.03
3 rd	0.03	0.37	1.03
2 nd	-0.04	0.37	0.96

¹Regression does not include an indicator of either MESG receipt or HELP receipt as a predictor variable because of low cell counts.

²Students who were in their sixth or fifth year of continuous enrollment at a Mississippi community college/public university are treated as the reference category because there were too few individuals in their sixth year of enrollment to treat as a separate category.

Note: *p<0.05; **p<0.01; ***p<0.001 (two-tailed test)

Table 23 presents results from the earnings regression conducted for students receiving MTAG as a current college student and comparison group students who graduated from a Mississippi community college/public university and subsequently assumed a job in Mississippi. The figures indicate that the MTAG graduates and their peers in the comparison group did not differ significantly in their earnings levels after controlling for other factors.

Regarding the control variables, male graduates, white graduates (relative to black peers), graduates with a higher cumulative college GPA, and graduates who earned a bachelor's degree (relative to those earning an AA/AS) were estimated to have significantly higher earnings.

Table 23. OLS Regression Results for Earnings of Students Receiving MTAG while Currently Enrolled and Comparison Group Students Who Assumed a Job in MS within One Year of Graduating from a Mississippi Community College/Public University¹

Effect	B	SE	Exp(B)
Intercept	9.83***	0.27	18,509.10
Received MTAG	0.04	0.04	1.04
Gender (Male as Reference)			
Female	-0.11*	0.05	0.89
Race (White as Reference)			
Black	-0.13*	0.07	0.88
Other Race	-0.23	0.16	0.79
Log of Expected Family Contribution (\$)	0.00	0.01	1.00
Cumulative College GPA	0.15**	0.06	1.16
Initial Institution Category (Community College as Reference)			
Four-Year University	-0.07	0.09	0.93
Current Institution Category (Community College as Reference)			
Four-Year University	-0.04	0.08	0.96
Degree Earned (Bachelor's as Reference)			
AAS Technical Degree	0.01	0.05	1.01
Technical/Career Certificate	-0.12	0.09	0.89
AA/AS	-0.45***	0.08	0.64
Year of Enrollment as of 2011-2012 (6th and 5th as Reference)²			
4 th	-0.03	0.15	0.97
3 rd	0.06	0.14	1.06
2 nd	0.00	0.14	1.00

¹Regression does not include an indicator of either MESG receipt or HELP receipt as a predictor variable because of low cell counts.

²Students who were in their sixth or fifth year of continuous enrollment at a Mississippi community college/public university are treated as the reference category because there were too few individuals in their sixth year of enrollment to treat as a separate category.

Note: *p<0.05; **p<0.01; ***p<0.001 (two-tailed test)

Examination of Students Receiving MESG

Note: Table A3 in the Appendix contains descriptive statistics for students receiving MESG and for students in the associated comparison group. These figures indicate that the two groups are largely balanced on relevant social and academic characteristics.

Table 24 displays the numbers of students matriculating to a Mississippi community college or Mississippi public university between 2004-2005 and 2010-2011 who received MESG upon enrollment along with the numbers of students in the comparison group comprised of those not receiving MESG. The results show that a total of 2,304 students obtained MESG aid over the study period, while there were 286 comparison group members who enrolled over the same interval.

Table 24. Number of Students Enrolling in a Mississippi Community College/Public University who Received MESG as an Entering Degree-Seeking Freshman and Number of Students in the Comparison Group

Cohort	# of MESG Students	# of Comparison Group Students ¹
2004-2005	301	36
2005-2006	286	48
2006-2007	290	22
2007-2008	294	52
2008-2009	348	41
2009-2010	379	48
2010-2011	406	39
Total	2,304	286

¹ The comparison group figures are weighted sums that have been rounded to the nearest integer. Due to rounding, the cohort-specific results may not add up exactly to the total results.

Retention Outcomes

Table 25 shows results on the postsecondary retention of Mississippi community college/public university students receiving MESG and of their peers within the comparison group. Overall, a higher share of MESG students than comparison students (96.5 vs. 93.3%) remained a student at a Mississippi public postsecondary institution one year after initial enrollment.

Table 25. Postsecondary Retention of Students Receiving MESG as an Entering Degree-Seeking Freshman and Comparison Group Students

Cohort	MESG Recipients Retained as an MS Community/Public University Student 1 Year after Enrollment		Comparison Group Members Retained as an MS Community College/Public University Student 1 Year after Enrollment	
	#	% ¹	# ²	% ³
2004-2005	287	95.35	32	87.24
2005-2006	274	95.80	47	97.94
2006-2007	278	95.86	20	93.54
2007-2008	283	96.26	50	94.61
2008-2009	341	97.99	37	90.87
2009-2010	368	97.10	46	96.54
2010-2011	393	96.80	35	90.26
Total	2,224	96.53	267	93.34

¹ Denominator is the total number of students receiving MESG in the respective cohort.

² The comparison group figures are weighted sums that have been rounded to the nearest integer. Due to rounding, the cohort-specific results may not add up exactly to the total results.

³ Denominator is the total number of comparison group students in the respective cohort. These percentages may not exactly equal the quotients of the reported numerators and denominators because the latter are displayed rounded to the nearest integer.

Table 26 presents results from the regression of postsecondary retention conducted for students receiving MESG and comparison group students. The estimates indicate that those students who received MESG did not differ significantly from peers in the comparison group in their odds of remaining at a Mississippi public postsecondary institution one year after initial enrollment, after controlling for other factors.

Regarding the control variables, female students and students who initially enrolled in a Mississippi public university were estimated to have significantly higher odds of retention.

Table 26. Binary Logistic Regression Results for the Postsecondary Retention of Students Receiving MESG as an Entering Degree-Seeking Freshman and Comparison Group Students ¹

Effect	B	SE	Odds Ratio
Intercept	0.75	4.67	2.12
Received MESG	0.44	0.47	1.55
Gender (Male as Reference)			
Female	0.86*	0.43	2.36
Log of Expected Family Contribution (\$)	0.02	0.05	1.02
High School GPA	0.33	0.95	1.39
ACT Score	-0.05	0.14	0.95
Received MTAG	0.45	0.61	1.56
Initial Institution Category (Community College as Reference)			
Four-Year University	1.22***	0.35	3.39
Cohort (2004-2005 as Reference)			
2005-2006	1.05	0.60	2.87
2006-2007	0.43	0.62	1.54
2007-2008	0.45	0.79	1.56
2008-2009	0.28	0.78	1.32
2009-2010	0.95	0.62	2.57
2010-2011	0.31	0.69	1.36

Note: *p<0.05; **p<0.01; ***p<0.001 (two-tailed test)

¹Indicators of students' racial background and HELP receipt status are not included as predictor variables in the regression because of low cell counts.

Degree Attainment Outcomes

Table 27 displays the results on degree attainment for Mississippi community college/public university students receiving MESG and for their peers in the comparison group. The figures show that 86.2% of MESG students earned a degree/certificate from a Mississippi public postsecondary institution within six years of initial enrollment, while this was the case for 70.1% of comparison group members.

Table 27. Six-Year Degree Attainment Levels of Students Receiving MESG as an Entering Degree-Seeking Freshman and Comparison Group Students

Cohort	MESG Recipients Earning an MS Community College/Public University Degree		Comparison Group Members Earning an MS Community College/Public University Degree	
	#	% ¹	# ²	% ³
2004-2005	253	84.05	24	67.29
2005-2006	254	88.81	40	83.30
2006-2007	247	85.17	15	71.70
2007-2008	257	87.41	28	53.83
2008-2009	298	85.63	22	53.63
2009-2010	327	86.28	38	79.36
2010-2011	350	86.21	33	83.30
Total	1,986	86.20	200	70.09

¹ Denominator is the total number of students receiving MESG in the respective cohort.

² The comparison group figures are weighted sums that have been rounded to the nearest integer. Due to rounding, the cohort-specific results may not add up exactly to the total results.

³ Denominator is the total number of comparison group students in the respective cohort. These percentages may not exactly equal the quotients of the reported numerators and denominators because the latter are displayed rounded to the nearest integer.

Table 28 shows results from the regression of degree attainment conducted for students receiving MESG and comparison group students. The estimates indicate that the MESG students had odds 2.7 times greater than peers in the comparison group of earning a degree from a Mississippi public postsecondary institution within six years of initial enrollment, controlling for other factors.

Regarding the control variables, female students, black students (relative to white peers), and students with a higher expected family contribution were estimated to have significantly higher odds of receiving a degree from a Mississippi community college/public university.

Table 28. Binary Logistic Regression Results for Degree Attainment within Six Years of Students Receiving MESG as an Entering Degree-Seeking Freshman and Comparison Group Students¹

Effect	B	SE	Odds Ratio
Intercept	0.55	3.95	1.73
Received MESG	0.98***	0.25	2.68
Gender (Male as Reference)			
Female	0.65**	0.23	1.92
Race (White as Reference)			
Black	1.13*	0.49	3.10
Other Race	-0.10	0.48	0.91
Log of Expected Family Contribution (\$)	0.15***	0.03	1.16
Cumulative High School GPA	-0.09	0.82	0.91
ACT Score	-0.04	0.08	0.96
Received MTAG	0.05	0.31	1.05
Initial Institution Category (Community College as Reference)			
Four-Year University	0.13	0.21	1.14
Cohort (2004-2005 as Reference)			
2005-2006	0.72	0.49	2.05
2006-2007	0.08	0.39	1.08
2007-2008	-0.49	0.44	0.61
2008-2009	-0.36	0.43	0.70
2009-2010	0.33	0.44	1.39
2010-2011	0.64	0.41	1.89

Note: *p<0.05; **p<0.01; ***p<0.001 (two-tailed test)

¹An indicator of HELP aid receipt is not included as a predictor variable in the regression because of low cell counts.

Table 29 reports the predicted probability of the average student earning a degree/certificate from a Mississippi public postsecondary institution within six years assuming they did not receive MESG and assuming that they did. These figures were calculated based on the regression estimates shown in Table 28. The results indicate that receiving MESG increases the probability that a student obtains a degree from 85.2% to 93.9%, a difference of 8.7 percentage points.

Table 29. Predicted Probability of Degree Attainment by Whether Student Received MESG as an Entering Degree-Seeking Freshman ¹

Did Not Receive MESG	Did Receive MESG	Difference
85.16%	93.86%	+8.70

¹In calculating each of the predicted probabilities, all the continuous control variables (e.g., ACT score) were set equal to their mean and all of the categorical control variables (e.g., gender) were set equal to the category with the largest number of observations.

Table 30 presents the distribution of Mississippi community college/public university graduates by type of degree earned both for students who received MESG and for the comparison group. The share of MTAG graduates obtaining a bachelor's degree (95.1%) was somewhat larger than the share of comparison group graduates that did (90.7%), whereas differences were more limited in the case of AA/AS degrees (3.2% vs. 5.8%).

Table 30. Distributions by Degree Earned of Students Receiving MESG as an Entering Degree-Seeking Freshman and Comparison Group Students who Graduated from a Mississippi Community College/Public University

Cohort	MESG Recipients								Comparison Group							
	AAS/Technical Degree		Technical Career Certificate		AA/AS		Bachelor's		AAS/Technical Degree		Technical Career Certificate		AA/AS		Bachelor's	
	#	% ¹	#	% ¹	#	% ¹	#	% ¹	# ²	% ³	# ²	% ³	# ²	% ³	# ²	% ²
2004-2005	<10	-	<10	-	10	3.95	239	94.47	<10	-	<10	-	<10	-	22	89.04
2005-2006	<10	-	<10	-	<10	-	240	94.49	<10	-	<10	-	<10	-	35	88.10
2006-2007	<10	-	<10	-	<10	-	236	95.55	<10	-	<10	-	<10	-	14	93.84
2007-2008	<10	-	<10	-	<10	-	250	97.28	<10	-	<10	-	<10	-	26	94.04
2008-2009	<10	-	<10	-	<10	-	285	95.64	<10	-	<10	-	<10	-	20	92.08
2009-2010	<10	-	<10	-	18	5.50	301	92.05	<10	-	<10	-	<10	-	32	85.02
2010-2011	<10	-	<10	-	10	2.86	338	96.57	<10	-	<10	-	<10	-	31	96.30
Total	31	1.56	<10	-	63	3.17	1,889	95.12	<10	-	<10	-	12	5.75	182	90.68

¹ Denominator is the total number of students receiving MTAG while enrolled in college in the respective cohort who earned a degree/certificate from a Mississippi community college or Mississippi public university within six years of enrollment.

² The comparison group figures are weighted sums that have been rounded to the nearest integer. Due to rounding, the cohort-specific results may not add up exactly to the total results.

³ Denominator is the total number of comparison group students in the respective cohort who earned a degree/certificate from a Mississippi community college or Mississippi public university within six years of enrollment. These percentages may not exactly equal the quotients of the reported numerators and denominators because the latter are displayed rounded to the nearest integer.

Employment and Earnings Outcomes

Table 31 displays the employment and earnings levels of Mississippi community/college public university graduates who received MESH as an entering degree-seeking freshman and of their counterparts in the comparison group. Among MESH recipients completing a degree or certificate, 57.7% assumed a job in Mississippi within one year, making \$32,405 on average. The corresponding figures for the comparison group were 63.9% and \$28,992.

Table 31. Employment and Earnings of Students Receiving MESH as an Entering Degree-Seeking Freshman and Comparison Group Students who Graduated from a Mississippi Community College/Public University

Cohort	MESH Recipients Employed within One Year			Comparison Group Members Employed within One Year		
	#	% ¹	Avg. Earnings (\$)	# ²	% ³	Avg. Earnings (\$)
2004-2005	79	56.83	36,015	<10	-	-
2005-2006	93	60.39	29,122	22	62.58	22,047
2006-2007	83	55.33	33,495	10	77.31	36,275
2007-2008	83	56.08	29,067	16	83.46	29,005
2008-2009	127	62.56	33,163	<10	-	-
2009-2010	116	53.7	32,391	13	50.4	38,229
2010-2011	135	58.19	33,557	17	67	30,850
Total	716	57.65	32,405	90	63.85	28,992

¹ Denominator is the number of students receiving MESH as an entering degree-seeking freshman in the respective cohort who earned a degree/certificate from a Mississippi community college or Mississippi public university within six years of enrollment and did not re-enroll in a Mississippi public postsecondary institution.

² The comparison group figures are weighted sums that have been rounded to the nearest integer. Due to rounding, the cohort-specific results may not add up exactly to the total results.

³ Denominator is the number of comparison group students in the respective cohort who earned a degree/certificate from a Mississippi community college or Mississippi public university within six years of enrollment and did not immediately re-enroll in a Mississippi public postsecondary institution. These percentages may not exactly equal the quotients of the reported numerators and denominators because the latter are displayed rounded to the nearest integer.

Table 32 displays the employment and earnings levels of Mississippi community college/public university graduates by the type of degree earned both for students who received MESH and for the comparison group. Among bachelor's degree recipients, MESH graduates entered the Mississippi workforce at an appreciably lower rate than comparison group graduates (57.1% vs. 63.7%) but had somewhat higher earnings conditional on employment (\$32,020 vs. \$29,518). Additionally, MESH graduates completing an AAS/technical degree were employed in Mississippi at a rate of 95.5% and had average earnings of \$44,225, while MESH students that earned an AA/AS entered the state workforce at a rate of 52.4% and made \$30,146 on average. Corresponding results cannot be reported for the comparison group owing to low cell counts.

Table 32. Employment and Earnings by Degree Type among Students Receiving MESH as an Entering Degree-Seeking Freshman and Comparison Group Students who Graduated from a Mississippi Community College/Public University

MESH Recipients Employed within One Year				Comparison Group Members Employed within One Year			
Cohort	#	% ¹	Avg. Earnings (\$)		# ²	% ³	Avg. Earnings (\$)
AAS/Technical Degree							
2004-2005	<10	-	-		<10	-	-
2005-2006	<10	-	-		<10	-	-
2006-2007	<10	-	-		<10	-	-
2007-2008	<10	-	-		<10	-	-
2008-2009	<10	-	-		<10	-	-
2009-2010	<10	-	-		<10	-	-
2010-2011	<10	-	-		<10	-	-
Total	21	95.45	44,225		<10	-	-
Technical/Career Certificate							
2004-2005	<10	-	-		<10	-	-
2005-2006	<10	-	-		<10	-	-
2006-2007	<10	-	-		<10	-	-
2007-2008	<10	-	-		<10	-	-
2008-2009	<10	-	-		<10	-	-
2009-2010	<10	-	-		<10	-	-
2010-2011	<10	-	-		<10	-	-
Total	<10	-	-		<10	-	-
AA/AS							
2004-2005	<10	-	-		<10	-	-
2005-2006	<10	-	-		<10	-	-
2006-2007	<10	-	-		<10	-	-
2007-2008	<10	-	-		<10	-	-
2008-2009	<10	-	-		<10	-	-
2009-2010	<10	-	-		<10	-	-
2010-2011	<10	-	-		<10	-	-
Total	11	52.38	30,146		<10	-	-
Bachelor's							
2004-2005	74	55.22	35,412		<10	-	-
2005-2006	88	59.86	28,318		18	59.29	22,780
2006-2007	78	54.17	32,537		10	76.00	37,421
2007-2008	80	55.56	28,504		15	83.47	27,199
2008-2009	119	61.34	32,885		<10	-	-
2009-2010	110	53.66	32,403		12	58.91	38,653
2010-2011	134	58.52	33,556		16	65.98	31,864
Total	683	57.06	32,020		81	63.71	29,518

¹ Denominator is the total number of students receiving MESH in the respective cohort who earned a degree/certificate of the specified type from a Mississippi community college or Mississippi public university within six years of enrollment and did not immediately re-enroll in a Mississippi public postsecondary institution.

² The comparison group figures are weighted sums that have been rounded to the nearest integer. Due to rounding, the cohort-specific results may not add up exactly to the total results.

³ Denominator is the total number of comparison group students in the respective cohort who earned a degree/certificate of the specified type from a Mississippi community college or Mississippi public university within six years of enrollment and did not immediately re-enroll in a Mississippi public postsecondary institution. These percentages may not exactly equal the quotients of the reported numerators and denominators because the latter are displayed rounded to the nearest integer.

Table 33 shows results from the regression of employment status conducted for students receiving MESH and comparison group students who had graduated from a Mississippi community college/public university within six years. The estimates indicate that the MESH graduates were not significantly different from their peers in the comparison group in their odds of assuming a job in Mississippi within one year of degree receipt, after controlling for other factors.

Regarding the control variables, graduates who had initially enrolled in a Mississippi community college were estimated to have significantly higher odds of entering the Mississippi workforce.

Table 33. Binary Logistic Regression Results for Employment of Students Receiving MESG as an Entering Degree-Seeking Freshman and Comparison Group Students within One Year of Graduating from a Mississippi Community College/Public University

Effect	B	SE	Odds Ratio
Intercept	4.94	3.69	139.44
Received MESG	-0.27	0.43	0.76
Gender (Male as Reference)			
Female	0.29	0.24	1.34
Race (White as Reference)			
Black	0.95	0.53	2.59
Other Race	0.32	0.58	1.37
Log of Expected Family Contribution (\$)	0.01	0.04	1.01
High School GPA	-0.38	0.76	0.68
ACT Score	-0.09	0.09	0.92
Received MTAG	0.12	0.44	1.13
Received HELP	-0.27	0.65	0.76
Initial Institution Category (Community College as Reference)			
Four-Year University	-0.79**	0.30	0.45
Degree Earned (Bachelor's as Reference)			
Non-Bachelor's Degree ¹	-0.14	0.54	0.87
Cohort (2004-2005 as Reference)			
2005-2006	0.15	0.46	1.16
2006-2007	0.23	0.49	1.26
2007-2008	0.52	0.48	1.68
2008-2009	-0.05	0.46	0.96
2009-2010	-0.33	0.45	0.72
2010-2011	0.20	0.44	1.22

Note: *p<0.05; **p<0.01; ***p<0.001 (two-tailed test)

¹Those receiving an AAS, certificate, or AA/AS are combined into a single non-bachelor's category because of low cell counts.

Table 34 presents results from the earnings regression conducted for students receiving MESG and comparison group students who had graduated from a Mississippi community college/public university and subsequently assumed a job in Mississippi. The estimates indicate that the MESG graduates and their peers in the comparison group did not differ significantly in their earnings levels after controlling for other factors.

Regarding the control variables, non-white graduates and graduates with a higher expected family contribution were estimated to earn significantly more.

Table 34. OLS Regression Results for Earnings of Students Receiving MESG as an Entering Degree-Seeking Freshman and Comparison Group Students Who Assumed a Job in MS within One Year of Graduating from a Mississippi Community College/Public University¹

Effect	B	SE	Exp(B)
Intercept	9.34***	1.03	11,406.13
Received MESG	-0.07	0.12	0.93
Gender (Male as Reference)			
Female	-0.03	0.07	0.97
Race (White as Reference)			
Non White ²	0.39*	0.18	1.47
Log of Expected Family Contribution (\$)	0.03*	0.01	1.03
High School GPA	-0.12	0.24	0.89
ACT Score	0.04	0.04	1.04
Received MTAG	0.15	0.11	1.17
Initial Institution Category (Community College as Reference)			
Four-Year University	-0.17	0.10	0.85
Degree Earned (Bachelor's as Reference)			
Non Bachelor's Degree ³	-0.06	0.14	0.95
Cohort (2004-2005 as Reference)			
2005-2006	-0.27*	0.13	0.76
2006-2007	-0.02	0.19	0.98
2007-2008	-0.13	0.12	0.88
2008-2009	-0.36	0.20	0.7
2009-2010	0.00	0.13	1.00
2010-2011	-0.09	0.12	0.91

Note: *p<0.05; **p<0.01; ***p<0.001 (two-tailed test)

¹An indicator of HELP aid receipt is not included as a predictor variable in the regression because of low cell counts.

²Black and other race graduates are combined into a single non-white category due to low cell counts.

³Those receiving an AAS, certificate, or AA/AS are combined into a single non-bachelor's category because of low cell counts.

Examination of Students Receiving HELP as an Entering Degree-Seeking Freshman

Note: Table A4 in the Appendix contains descriptive statistics for students receiving HELP as an entering degree-seeking freshman and for students in the associated comparison group. These figures indicate that the two groups are largely balanced on relevant social and academic characteristics.

Table 35 displays the numbers of students matriculating to a Mississippi community college or Mississippi public university between 2004-2005 and 2010-2011 who received HELP as an entering degree-seeking freshman along with the numbers of students in the comparison group comprised of those enrolling but not initially receiving HELP. A total of 403 students received HELP upon enrollment during the study period, while there were 13,674 comparison group students who enrolled without receiving HELP.

Table 35. Number of Students Enrolling in a Mississippi Community College/Public University Who Received HELP as an Entering Degree-Seeking Freshman and Number of Students in the Comparison Group

Cohort	# of Students Receiving HELP	# of Students in Comparison Group ¹
2004-2005	90	1,808
2005-2006	61	1,680
2006-2007	56	1,627
2007-2008	67	1,760
2008-2009	43	2,053
2009-2010	32	2,218
2010-2011	54	2,528
Total	403	13,674

¹ The comparison group figures are weighted sums that have been rounded to the nearest integer. Due to rounding, the cohort-specific results may not add up exactly to the total results.

Retention Outcomes

Table 36 shows results on the postsecondary retention of Mississippi community college and Mississippi public university students receiving HELP as an entering degree-seeking freshman and of their peers not receiving HELP within the comparison group. Overall, the results show that similar percentages of HELP students (89.3%) and comparison students (89.4%) remained a student at a Mississippi public postsecondary institution one year after initial enrollment.

Table 36. Postsecondary Retention of Students Receiving HELP as an Entering Degree-Seeking Freshman and Comparison Group Students

Cohort	HELP Recipients Retained as an MS Community/Public University Student 1 Year After Enrollment		Comparison Group Members Retained as an MS Community College/Public University Student 1 Year After Enrollment	
	#	% ¹	# ²	% ³
2004-2005	77	85.56	1,557	86.13
2005-2006	50	81.97	1,462	87.03
2006-2007	49	87.50	1,456	89.54
2007-2008	62	92.54	1,583	89.94
2008-2009	40	93.02	1,853	90.23
2009-2010	31	96.88	2,022	91.18
2010-2011	51	94.44	2,293	90.72
Total	360	89.33	12,227	89.42

¹ Denominator is the total number of students receiving HELP as an entering degree-seeking freshman in the respective cohort.

² The comparison group figures are weighted sums that have been rounded to the nearest integer. Due to rounding, the cohort-specific results may not add up exactly to the total results.

³ Denominator is the total number of comparison group students in the respective cohort. These percentages may not exactly equal the quotients of the reported numerators and denominators because the latter are displayed rounded to the nearest integer.

Table 37 presents results from the regression of postsecondary retention conducted for students receiving HELP as an entering degree-seeking freshman and comparison group students. The estimates indicate that HELP students did not differ significantly from peers in the comparison group in their odds of remaining at a Mississippi community college/public university one year after initial enrollment after controlling for other factors.

Regarding the control variables, black and other race students (relative to white peers), students with a higher cumulative high school GPA, students receiving MTAG, and students who initially enrolled in a Mississippi public university were estimated to have significantly higher odds of retention.

Table 37. Binary Logistic Regression Results for the Postsecondary Retention of Students Receiving HELP as an Entering Degree-Seeking Freshman and Comparison Group Students ¹

Effect	B	SE	Odds Ratio
Intercept	-4.04***	0.86	0.02
Received HELP	-0.03	0.18	0.97
Gender (Male as Reference)			
Female	-0.10	0.18	0.90
Race (White as Reference)			
Black	0.70**	0.22	2.02
Other Race	1.44***	0.41	4.24
Log of Expected Family Contribution (\$)	-0.02	0.03	0.99
Cumulative High School GPA	0.98***	0.22	2.67
ACT Score	0.07	0.03	1.07
Received MTAG	0.49*	0.23	1.63
Received MESG	-0.18	0.33	0.84
Initial Institution Category (Community College as Reference)			
Four-Year University	0.94***	0.19	2.55
Cohort (2004-2005 as Reference)			
2005-2006	-0.15	0.30	0.86
2006-2007	0.10	0.29	1.11
2007-2008	0.54	0.31	1.72
2008-2009	0.56	0.30	1.75
2009-2010	0.77**	0.25	2.15
2010-2011	0.65*	0.27	1.91

Note: *p<0.05; **p<0.01; ***p<0.001 (two-tailed test)

Degree Attainment Outcomes

Table 38 displays figures on degree attainment among Mississippi community college/public university students who received HELP as an entering degree-seeking freshman and for students in the comparison group. The figures reveal that 75.4% of the HELP students earned a degree from a Mississippi public postsecondary institution within six years of initial enrollment, compared to 67.3% of comparison group members.

Table 38. Six-Year Degree Attainment Levels of Students Receiving HELP as an Entering Degree-Seeking Freshman and Comparison Group Students

Cohort	HELP Recipients Earning an MS Community College/Public University Degree		Comparison Group Members Earning an MS Community College/Public University Degree	
	#	% ¹	# ²	% ³
2004-2005	73	81.11	1,249	69.09
2005-2006	47	77.05	1,124	66.88
2006-2007	37	66.07	1,078	66.29
2007-2008	51	76.12	1,155	65.63
2008-2009	31	72.09	1,319	64.25
2009-2010	24	75.00	1,530	69.00
2010-2011	41	75.93	1,751	69.26
Total	304	75.43	9,207	67.33

¹ Denominator is the total number of students receiving HELP as an entering degree-seeking freshman in the respective cohort.

² The comparison group figures are weighted sums that have been rounded to the nearest integer. Due to rounding, the cohort-specific results may not add up exactly to the total results.

³ Denominator is the total number of comparison group students in the respective cohort. These percentages may not exactly equal the quotients of the reported numerators and denominators because the latter are displayed rounded to the nearest integer.

Table 39 shows results from the regression of degree attainment conducted for students receiving HELP as an entering degree-seeking freshman and comparison group students. The estimates indicate that the HELP students had 45% higher odds than peers in the comparison group of earning a degree from a Mississippi public postsecondary institution within six years of initial enrollment, controlling for other factors.

Regarding the control variables, female students, other race students (relative to white peers), students with a higher cumulative high school GPA, and students receiving MTAG or MESG were estimated to have significantly higher odds of completing a degree.

Table 39. Binary Logistic Regression Results for Degree Attainment within Six Years of Students Receiving HELP as an Entering Degree-Seeking Freshman and Comparison Group Students

Effect	B	SE	Odds Ratio
Intercept	-4.47***	0.62	0.01
Received HELP	0.37**	0.13	1.45
Gender (Male as Reference)			
Female	0.42***	0.12	1.52
Race (White as Reference)			
Black	0.21	0.14	1.24
Other Race	1.03***	0.24	2.80
Log of Expected Family Contribution (\$)	-0.02	0.02	0.98
Cumulative High School GPA	1.35***	0.15	3.85
ACT Score	0.00	0.02	1.00
Received MTAG	0.55***	0.14	1.73
Received MESG	0.46*	0.21	1.58
Initial Institution Category (Community College as Reference)			
Four-Year University	0.25	0.14	1.29
Cohort (2004-2005 as Reference)			
2005-2006	-0.19	0.23	0.83
2006-2007	-0.48*	0.22	0.62
2007-2008	-0.18	0.22	0.83
2008-2009	-0.28	0.22	0.76
2009-2010	-0.08	0.21	0.92
2010-2011	-0.04	0.21	0.96

Note: *p<0.05; **p<0.01; ***p<0.001 (two-tailed test)

Table 40 reports the predicted probability of the average student earning a degree/certificate from a Mississippi public postsecondary institution within six years assuming they did not receive HELP, and assuming that they did. These figures were calculated based on the regression estimates shown in Table 39. The results indicate that receiving HELP increases the probability that a student obtains a degree from 67.6% to 75.1%, a difference of 7.5 percentage points.

Table 40. Predicted Probability of Degree Attainment by Whether Student Received HELP as an Entering Degree-Seeking Freshman¹

Did Not Receive HELP	Did Receive HELP	Difference
67.62%	75.14%	+7.52

¹In calculating each of the predicted probabilities, all the continuous control variables (e.g., ACT score) were set equal to their mean and all of the categorical control variables (e.g., gender) were set equal to the category with the largest number of observations.

Table 41 presents the distribution of Mississippi community college/public university graduates by the type of degree earned for both students who had received HELP as an entering degree-seeking freshman and for the comparison group. The share of HELP graduates obtaining a bachelor's degree (84.2%) was somewhat larger than the share of comparison group graduates that did (80.6%), whereas differences were more limited the case of AAS/technical degrees (4.6% vs. 6.7%) and AA/AS degrees (9.5% vs. 10.6%).

Table 41. Distributions by Degree Earned of Students Receiving HELP as an Entering Degree-Seeking Freshman and Comparison Group Students who Graduated from a Mississippi Community College/Public University

Cohort	HELP Recipients								Comparison Group							
	AAS/Technical Degree		Technical Career Certificate		AA/AS		Bachelor's		AAS/Technical Degree		Technical Career Certificate		AA/AS		Bachelor's	
	#	% ¹	#	% ¹	#	% ¹	#	% ¹	# ²	% ³	# ²	% ³	# ²	% ³	# ²	% ³
2004-2005	<10	-	<10	-	10	13.70	56	76.71	132	10.56	28	2.24	116	9.28	973	77.92
2005-2006	<10	-	<10	-	<10	-	37	78.72	95	8.42	31	2.77	122	10.84	876	77.97
2006-2007	<10	-	<10	-	<10	-	36	97.30	60	5.56	17	1.58	101	9.34	901	83.52
2007-2008	<10	-	<10	-	<10	-	45	88.24	71	6.12	33	2.84	122	10.55	930	80.49
2008-2009	<10	-	<10	-	<10	-	27	87.10	82	6.24	17	1.29	126	9.54	1,094	82.93
2009-2010	<10	-	<10	-	<10	-	21	87.50	88	5.74	34	2.21	190	12.41	1,219	79.64
2010-2011	<10	-	<10	-	<10	-	34	82.93	93	5.30	28	1.61	199	11.39	1,431	81.70
Total	14	4.61	<10	-	29	9.54	256	84.21	620	6.74	188	2.04	976	10.60	7,423	80.63

¹ Denominator is the total number of students receiving HELP as an entering degree-seeking freshman in the respective cohort who earned a degree/certificate from a Mississippi community college or Mississippi public university within six years of enrollment.

² The comparison group figures are weighted sums that have been rounded to the nearest integer. Due to rounding, the cohort-specific results may not add up exactly to the total results.

³ Denominator is the total number of comparison group students in the respective cohort who earned a degree/certificate from a Mississippi community college or Mississippi public university within six years of enrollment. These percentages may not exactly equal the quotients of the reported numerators and denominators because the latter are displayed rounded to the nearest integer.

Employment and Earnings Outcomes

Table 42 displays the employment and earnings levels of Mississippi community/college public university graduates who received HELP as an entering degree-seeking freshman and of their counterparts in the comparison group. Among HELP recipients completing a degree or certificate, 74.2% assumed a job in Mississippi within one year, making \$29,130 on average. The corresponding figures for the comparison group were 71.9% and \$29,902.

Table 42. Employment and Earnings of Students Receiving HELP as an Entering Degree-Seeking Freshman and Comparison Group Students Who Graduated from a Mississippi Community College/Public University

Cohort	HELP Recipients Employed within One Year			Comparison Group Members Employed within One Year		
	#	% ¹	Avg. Earnings (\$)	# ²	% ³	Avg. Earnings (\$)
2004-2005	34	73.91	29,282	661	74.57	32,538
2005-2006	27	77.14	29,273	570	76.83	28,851
2006-2007	20	74.07	26,840	496	71.02	29,267
2007-2008	27	79.41	28,472	559	68.77	30,338
2008-2009	17	73.91	25,995	675	73.22	28,678
2009-2010	11	84.62	39,083	761	69.33	28,868
2010-2011	19	61.29	29,583	884	70.88	30,424
Total	155	74.16	29,130	4,606	71.9	29,902

¹ Denominator is the number of students receiving HELP as an entering degree-seeking freshman in the respective cohort who earned a degree/certificate from a Mississippi community college or Mississippi public university within six years of enrollment and did not re-enroll in a Mississippi public postsecondary institution.

² The comparison group figures are weighted sums that have been rounded to the nearest integer. Due to rounding, the cohort-specific results may not add up exactly to the total results.

³ Denominator is the number of comparison group students in the respective cohort who earned a degree/certificate from a Mississippi community college or Mississippi public university within six years of enrollment and did not immediately re-enroll in a Mississippi public postsecondary institution. These percentages may not exactly equal the quotients of the reported numerators and denominators because the latter are displayed rounded to the nearest integer.

Table 43 displays the employment and earnings levels of Mississippi community college/public university graduates by type of degree earned both for students who received HELP as an entering degree-seeking freshman and for the comparison group. A somewhat lower share of HELP graduates than comparison group graduates entered the Mississippi workforce among those completing an AAS/technical degree (85.7% vs. 89.3%) while the opposite was true among those completing a bachelor's (73.6% vs. 69.9%). With respect to pay, the average annualized earnings of HELP graduates were moderately lower than those of comparison group peers for those that obtained an AAS/technical degree (\$34,954 vs. \$37,278) whereas earnings levels were close in the case of bachelor's recipients (\$28,916 vs. \$29,397). Outcomes cannot be compared for the other two degree types (technical/career certificate and AA/AS) due to low cell counts among the HELP recipients.

Table 43. Employment and Earnings by Degree Type among Students Receiving HELP as an Entering Degree-Seeking Freshman and Comparison Group Students who Graduated from a Mississippi Community College/Public University

Cohort	HELP Recipients Employed within One Year			Comparison Group Members Employed within One Year		
	#	% ¹	Avg. Earnings (\$)	# ²	% ³	Avg. Earnings (\$)
AAS/Technical Degree						
2004-2005	<10	-	-	98	92.58	41,041
2005-2006	<10	-	-	71	94.02	36,253
2006-2007	<10	-	-	41	87.78	34,180
2007-2008	<10	-	-	47	81.66	36,352
2008-2009	<10	-	-	62	88.12	34,390
2009-2010	<10	-	-	68	88.25	38,931
2010-2011	<10	-	-	68	88.69	36,177
Total	12	85.71	34,954	455	89.26	37,278
Technical/Career Certificate						
2004-2005	<10	-	-	21	93.40	32,464
2005-2006	<10	-	-	23	90.00	27,141
2006-2007	<10	-	-	<10	-	-
2007-2008	<10	-	-	16	57.32	23,227
2008-2009	<10	-	-	12	92.04	31,741
2009-2010	<10	-	-	21	92.15	30,006
2010-2011	<10	-	-	18	91.16	28,876
Total	<10	-	-	120	84.44	29,049
AA/AS						
2004-2005	<10	-	-	42	74.49	30,755
2005-2006	<10	-	-	39	70.66	23,525
2006-2007	<10	-	-	40	80.03	24,200
2007-2008	<10	-	-	38	74.20	24,854
2008-2009	<10	-	-	45	75.86	22,338
2009-2010	<10	-	-	55	62.56	23,,237
2010-2011	<10	-	-	58	70.85	23,049
Total	<10	-	-	316	71.73	24,420
Bachelor's						
2004-2005	27	75.00	28,818	500	71.25	30,839
2005-2006	22	75.86	28,845	437	74.61	28,062
2006-2007	20	74.07	26,840	406	68.72	29,237
2007-2008	24	82.76	29,031	459	67.74	30,296
2008-2009	15	71.43	25,995	556	71.35	28,420
2009-2010	10	83.33	36,912	618	67.83	28,148
2010-2011	16	57.14	30,230	739	69.21	30,450
Total	134	73.63	28,916	3,715	69.91	29,397

¹ Denominator is the total number of students receiving HELP as an entering degree-seeking freshman in the respective cohort who earned a degree/certificate of the specified type from a Mississippi community college or Mississippi public university within six years of enrollment and did not immediately re-enroll in a Mississippi public postsecondary institution.

² The comparison group figures are weighted sums that have been rounded to the nearest integer. Due to rounding, the cohort-specific results may not add up exactly to the total results.

³ Denominator is the total number of comparison group students in the respective cohort who earned a degree/certificate of the specified type from a Mississippi community college or Mississippi public university within six years of enrollment and did not immediately re-enroll in a Mississippi public postsecondary institution. These percentages may not exactly equal the quotients of the reported numerators and denominators because the latter are displayed rounded to the nearest integer.

Table 44 shows results from the regression of employment status conducted for students receiving HELP as an entering degree-seeking freshman and comparison group students who had graduated from a Mississippi community college/public university within six years. The estimates indicate that the HELP students were not significantly different from their peers in the comparison group in their odds of assuming a job in Mississippi within one year of degree receipt, after controlling for other factors.

Regarding the control variables, graduates who had initially enrolled in a Mississippi community college and graduates who earned a bachelor's (relative to those who earned an AA/AS degree) were estimated to have significantly higher odds of entering the Mississippi workforce.

Table 44. Binary Logistic Regression Results for Employment of Students Receiving HELP as an Entering Degree-Seeking Freshman and Comparison Group Students within One Year of Graduating from a Mississippi Community College/Public University

Effect	B	SE	Odds Ratio
Intercept	4.51***	1.10	90.87
Received HELP	0.12	0.17	1.13
Gender (Male as Reference)			
Female	0.18	0.18	1.20
Race (White as Reference)			
Black	0.40	0.21	1.49
Other Race	-0.03	0.40	0.97
Log of Expected Family Contribution (\$)	-0.03	0.04	0.97
High School GPA	-0.41	0.25	0.66
ACT Score	-0.06	0.04	0.94
Received MTAG	0.43	0.26	1.54
Received MESH	0.22	0.27	1.24
Initial Institution Category (Community College as Reference)			
Four-Year University	-1.09***	0.26	0.34
Degree Earned (Bachelor's as reference)			
AAS Technical Degree	0.35	0.45	1.42
Technical/Career Certificate	0.53	0.59	1.69
AA/AS	-1.08**	0.36	0.34
Cohort (2004-2005 as Reference)			
2005-2006	0.14	0.35	1.15
2006-2007	-0.02	0.35	0.98
2007-2008	0.08	0.31	1.09
2008-2009	0.04	0.31	1.04
2009-2010	0.11	0.28	1.12
2010-2011	-0.22	0.29	0.80

Note: *p<0.05; **p<0.01; ***p<0.001 (two-tailed test)

Table 45 presents results from the earnings regression conducted for students receiving HELP as an entering degree-seeking freshman and comparison group students who had graduated from a Mississippi community college/public university and subsequently assumed a job in Mississippi. The figures indicate that the HELP graduates and their peers in the comparison group did not differ significantly in their earnings levels after controlling for other factors.

Regarding the control variables, graduates with a higher cumulative high school GPA and graduates who completed an AAS/technical degree or technical/career certificate (relative to those completing a bachelor's) were estimated to have significantly higher earnings.

Table 45. OLS Regression Results for Earnings of Students Receiving HELP as an Entering Degree-Seeking Freshman and Comparison Group Students Who Assumed a Job in MS within One Year of Graduating from a Mississippi Community College/Public University¹

Effect	B	SE	Exp(B)
Intercept	9.18***	0.41	9,706.06
Received HELP	-0.06	0.07	0.94
Gender (Male as Reference)			
Female	-0.14	0.07	0.87
Race (White as Reference)			
Black	-0.14	0.08	0.87
Other Race	-0.16	0.20	0.86
Log of Expected Family Contribution (\$)	0.00	0.01	1.00
Cumulative High School GPA	0.37**	0.13	1.44
ACT Score	-0.02	0.02	0.98
Received MTAG	0.05	0.08	1.05
Received MESH	-0.16	0.13	0.85
Initial Institution Category (Community College as Reference)			
Four-Year University	0.20	0.11	1.22
Degree Earned (Bachelor's as Reference)			
AAS Technical Degree	0.36**	0.14	1.43
Technical/Career Certificate	0.28*	0.11	1.32
AA/AS	-0.08	0.10	0.93
Cohort (2004-2005 as Reference)			
2005-2006	0.00	0.14	1.00
2006-2007	0.06	0.12	1.06
2007-2008	0.11	0.13	1.12
2008-2009	-0.09	0.16	0.92
2009-2010	0.14	0.13	1.15
2010-2011	0.12	0.11	1.13

Note: *p<0.05; **p<0.01; ***p<0.001 (two-tailed test)

Examination of Students Receiving HELP as a Current College Student

Note: Table A5 in the Appendix contains descriptive statistics for students receiving HELP as a current college student and for students in the associated comparison group. These figures indicate that the two groups are largely balanced on relevant social and academic characteristics.

Table 46 displays the numbers of students matriculating to a Mississippi community college or Mississippi public university between 2004-2005 and 2010-2011 who began receiving HELP in their second year of enrollment along with the numbers of students in the comparison group comprised of those not receiving HELP. The results show that a total of 150 students enrolling during this period started to receive HELP during their second year, while there were 3,150 comparison group students who enrolled without later receiving HELP.

Table 46. Number of Students Enrolling in a Mississippi Community College/Public University Who Received HELP the Next Year as a Current College Student and Number of Students in the Comparison Group

Cohort	# of HELP Students	# of Comparison Group Students ¹
2004-2005	11	298
2005-2006	11	328
2006-2007	<10	-
2007-2008	<10	-
2008-2009	19	511
2009-2010	23	725
2010-2011	75	629
Total	150	3,150

¹ The comparison group figures are weighted sums that have been rounded to the nearest integer. Due to rounding, the cohort-specific results may not add up exactly to the total results.

Degree Attainment Outcomes

Table 47 shows figures on the degree attainment of Mississippi community college/public university students who received HELP as a current college student and of their peers in the comparison group. The share of the HELP students who earned a degree/certificate from a Mississippi public postsecondary institution within six years (88.0%) exceeds the corresponding share of the comparison group (80.3%).

Table 47. Six-Year Degree Attainment Levels of Students Receiving HELP While Currently Enrolled and Comparison Group Students

Cohort	HELP Recipients Earning an MS Community College/Public University Degree		Comparison Group Members Earning an MS Community College/Public University Degree	
	#	% ¹	# ²	% ³
2004-2005	11	100.00	250	83.96
2005-2006	<10	-	274	83.46
2006-2007	<10	-	263	77.79
2007-2008	<10	-	260	80.90
2008-2009	16	84.21	420	82.30
2009-2010	19	82.61	558	77.01
2010-2011	67	89.33	503	79.93
Total	132	88.00	2,528	80.26

¹ Denominator is the total number of students receiving HELP as a current college student in the respective cohort.

² The comparison group figures are weighted sums that have been rounded to the nearest integer. Due to rounding, the cohort-specific results may not add up exactly to the total results.

³ Denominator is the total number of comparison group students in the respective cohort. These percentages may not exactly equal the quotients of the reported numerators and denominators because the latter are displayed rounded to the nearest integer.

Table 48 presents results from the regression of degree attainment conducted for students receiving HELP as a current college student and comparison group students. The estimates indicate that the HELP students were not significantly different from peers in the comparison group in their odds of earning a degree/certificate within six years of enrollment.

Regarding the control variables, students with a higher cumulative college GPA were estimated to have significantly higher odds of completing a degree.

Table 48. Binary Logistic Regression Results for Degree Attainment within Six Years of Students Receiving HELP while Currently Enrolled and Comparison Group Students¹

Effect	B	SE	Odds Ratio
Intercept	-3.48*	1.57	0.03
Received HELP	0.47	0.28	1.61
Gender (Male as Reference)			
Female	0.14	0.24	1.15
Race (White as Reference)			
Black	0.34	0.25	1.41
Other Race	0.11	0.49	1.11
Log of Expected Family Contribution (\$)	0.01	0.03	1.01
Cumulative High School GPA	0.33	0.32	1.39
Cumulative College GPA	0.72*	0.31	2.06
ACT Score	0.06	0.04	1.06
Received MTAG	0.41	0.40	1.50
Initial Institution Category (Community College as Reference)			
Four-Year University	0.35	0.23	1.42
Cohort (2004-2005 as Reference)			
2005-2006	-0.63	0.45	0.53
2006-2007	-0.83*	0.39	0.43
2007-2008	-0.28	0.32	0.75
2008-2009	-0.56	0.36	0.57
2009-2010	-0.84**	0.3	0.43
2010-2011	-0.43	0.28	0.65

Note: *p<0.05; **p<0.01; ***p<0.001 (two-tailed test)

¹An indicator of MESH receipt is not included as a predictor variable in the regression due to low cell counts.

Table 49 displays the distribution of Mississippi community college and Mississippi public university graduates by degree earned for students who received HELP as a current college student and for the comparison group. The share of HELP graduates obtaining a bachelor's degree (81.8%) was somewhat larger than the share of comparison group graduates that did (75.7%), whereas differences were more limited the case of AA/AS degrees (12.1% vs. 14.2%).

Table 49. Distributions by Degree Earned of Students Receiving HELP while Currently Enrolled and Comparison Group Students Who Graduated from a Mississippi Community College/Public University

Cohort	HELP Recipients								Comparison Group							
	AAS/ Technical Degree		Technical Career Certificate		AA/AS		Bachelor's		AAS/Technical Degree		Technical Career Certificate		AA/AS		Bachelor's	
	#	% ¹	#	% ¹	#	% ¹	#	% ¹	# ²	% ³	# ²	% ³	# ²	% ³	# ²	% ³
2004-2005	<10	-	<10	-	<10	-	11	100.00	37	14.67	<10	-	25	9.86	186	74.29
2005-2006	<10	-	<10	-	<10	-	<10	-	29	10.64	<10	-	31	11.38	210	76.73
2006-2007	<10	-	<10	-	<10	-	<10	-	15	5.60	<10	-	30	11.46	214	81.28
2007-2008	<10	-	<10	-	<10	-	<10	-	31	11.88	<10	-	29	11.28	198	76.21
2008-2009	<10	-	<10	-	<10	-	14	87.50	25	6.05	<10	-	69	16.46	321	76.33
2009-2010	<10	-	<10	-	<10	-	16	84.21	44	7.83	<10	-	95	17.04	415	74.28
2010-2011	<10	-	<10	-	12	17.91	51	76.12	46	9.11	<10	-	80	15.88	370	73.52
Total	<10	-	<10	-	16	12.12	108	81.82	226	8.95	30	1.17	359	14.21	1,913	75.66

¹ Denominator is the total number of students receiving HELP as an entering degree-seeking freshman in the respective cohort who earned a degree/certificate from a Mississippi community college or Mississippi public university within six years of enrollment.

² The comparison group figures are weighted sums that have been rounded to the nearest integer. Due to rounding, the cohort-specific results may not add up exactly to the total results.

³ Denominator is the total number of comparison group students in the respective cohort who earned a degree/certificate from a Mississippi community college or Mississippi public university within six years of enrollment. These percentages may not exactly equal the quotients of the reported numerators and denominators because the latter are displayed rounded to the nearest integer.

Employment and Earnings Outcomes

Table 50 displays the employment and earnings levels of Mississippi community college/public university graduates who started receiving HELP while enrolled in college and of their counterparts in the comparison group. Among HELP recipients completing a degree or certificate, 76.8% assumed a job in Mississippi within one year, making \$28,749 on average. The corresponding figures for the comparison group were 76.1% and \$30,924.

Table 50. Employment and Earnings of Students Receiving HELP while Currently Enrolled and Comparison Group Students Who Graduated from a Mississippi Community College/Public University

Cohort	HELP Recipients Employed within One Year			Comparison Group Members Employed within One Year		
	#	% ¹	Avg. Earnings (\$)	# ²	% ³	Avg. Earnings (\$)
2004-2005	<10	-	-	143	80.91	35,509
2005-2006	<10	-	-	148	83.63	33,004
2006-2007	<10	-	-	123	74.21	32,269
2007-2008	<10	-	-	159	85.85	32,070
2008-2009	<10	-	-	216	75.24	27,569
2009-2010	13	81.25	26,052	248	66.44	29,803
2010-2011	38	73.08	28,487	258	76.76	29,642
Total	73	76.84	28,749	1,294	76.13	30,924

¹ Denominator is the number of students receiving HELP while currently enrolled in the respective cohort who earned a degree/certificate from a Mississippi community college or Mississippi public university within six years of enrollment and did not re-enroll in a Mississippi public postsecondary institution.

² The comparison group figures are weighted sums that have been rounded to the nearest integer. Due to rounding, the cohort-specific results may not add up exactly to the total results.

³ Denominator is the number of comparison group students in the respective cohort who earned a degree/certificate from a Mississippi community college or Mississippi public university within six years of enrollment and did not immediately re-enroll in a Mississippi public postsecondary institution. These percentages may not exactly equal the quotients of the reported numerators and denominators because the latter are displayed rounded to the nearest integer.

Table 51 shows the employment and earnings levels of Mississippi community college/ public university graduates by type of degree earned for students who received HELP as a current college student, and for the comparison group. In the case of those obtaining a bachelor's degree, HELP and comparison group graduates were similar in employment levels (76.8% vs. 74.9%) and average earnings (\$29,009 vs. \$30,753). Outcomes cannot be compared for the other degree types due to low cell counts among HELP recipients.

Table 51. Employment and Earnings by Degree Type Among Students Receiving HELP While Currently Enrolled and Comparison Group Students Who Graduated from a Mississippi Community College/Public University

Cohort	HELP Recipients Employed within One Year			Comparison Group Members Employed within One Year		
	#	% ¹	Avg. Earnings (\$)	# ²	% ³	Avg. Earnings (\$)
AAS/Technical Degree						
2004-2005	<10	-	-	24	95.38	40,281
2005-2006	<10	-	-	20	89.57	37,763
2006-2007	<10	-	-	11	94.45	32,020
2007-2008	<10	-	-	24	92.71	37,295
2008-2009	<10	-	-	21	90.63	31,375
2009-2010	<10	-	-	32	83.98	42,159
2010-2011	<10	-	-	35	89.99	38,684
Total	<10	-	-	167	90.18	37,905
Technical/Career Certificate						
2004-2005	<10	-	-	<10	-	-
2005-2006	<10	-	-	<10	-	-
2006-2007	<10	-	-	<10	-	-
2007-2008	<10	-	-	<10	-	-
2008-2009	<10	-	-	<10	-	-
2009-2010	<10	-	-	<10	-	-
2010-2011	<10	-	-	<10	-	-
Total	<10	-	-	19	91.49	31,321
AA/AS						
2004-2005	<10	-	-	10	87.67	29,092
2005-2006	<10	-	-	13	63.27	17,085
2006-2007	<10	-	-	12	86.58	24,385
2007-2008	<10	-	-	12	86.57	15,982
2008-2009	<10	-	-	23	66.11	16,683
2009-2010	<10	-	-	23	55.15	22,392
2010-2011	<10	-	-	25	70.98	27,690
Total	<10	-	-	119	68.86	21,853
Bachelor's						
2004-2005	<10	-	-	107	77.39	34,859
2005-2006	<10	-	-	113	85.49	33,812
2006-2007	<10	-	-	96	70.77	32,992
2007-2008	<10	-	-	122	84.80	32,299
2008-2009	<10	-	-	170	74.81	28,708
2009-2010	11	78.57	28,437	189	65.45	28,724
2010-2011	34	75.56	27,467	192	75.23	28,390
Total	63	76.83	29,009	989	74.86	30,753

¹ Denominator is the total number of students receiving HELP as an entering degree-seeking freshman in the respective cohort who earned a degree/certificate of the specified type from a Mississippi community college or Mississippi public university within six years of enrollment and did not immediately re-enroll in a Mississippi public postsecondary institution.

² The comparison group figures are weighted sums that have been rounded to the nearest integer. Due to rounding, the cohort-specific results may not add up exactly to the total results.

³ Denominator is the total number of comparison group students in the respective cohort who earned a degree/certificate of the specified type from a Mississippi community college or Mississippi public university within six years of enrollment and did not immediately re-enroll in a Mississippi public postsecondary institution. These percentages may not exactly equal the quotients of the reported numerators and denominators because the latter are displayed rounded to the nearest integer.

Table 52 presents results from the regression of employment status conducted for students receiving HELP as a current college student and comparison group students who had graduated from a Mississippi community college or Mississippi public university within six years. The estimates indicate that the HELP students were not significantly different from peers in the comparison group in their odds of assuming a job in Mississippi within one year of degree receipt after controlling for other factors.

Regarding the control variables, graduates who initially enrolled in a Mississippi community college were estimated to have significantly higher odds of entering the Mississippi workforce.

Table 52. Binary Logistic Regression Results for Employment of Students Receiving HELP While Currently Enrolled and Comparison Group Students within One Year of Graduating from a Mississippi Community College/Public University¹

Effect	B	SE	Odds Ratio
Intercept	-1.17	2.18	0.31
Received HELP	0.27	0.29	1.32
Gender (Male as Reference)			
Female	0.54	0.31	1.72
Race (White as Reference)			
Black	0.26	0.32	1.3
Other Race	-0.5	0.51	0.61
Log of Expected Family Contribution (\$)	0.12	0.07	1.12
Cumulative High School GPA	0.39	0.46	1.48
Cumulative College GPA	-0.28	0.36	0.76
ACT Score	0.09	0.06	1.1
Received MTAG	-0.99	0.56	0.37
Initial Institution Category (Community College as Reference)			
Four-Year University	-0.97*	0.41	0.38
Degree Earned (Bachelor's as Reference)			
Non-Bachelor's Degree ²	-0.43	0.46	0.65
Cohort (2004-2005 as Reference)			
2005-2006	0.49	0.61	1.63
2006-2007	-0.2	0.58	0.82
2007-2008	0.97	0.58	2.65
2008-2009	-0.02	0.54	0.98
2009-2010	-0.25	0.53	0.78
2010-2011	-0.25	0.53	0.78

Note: *p<0.05; **p<0.01; ***p<0.001 (two-tailed test)

¹An indicator of MESH receipt is not included as a predictor variable in the regression due to low cell counts.

²Those receiving an AAS, certificate, or AA/AS are combined into a single non-bachelor's category because of low cell counts.

Table 53 displays results from the earnings regression conducted for students receiving HELP as a current college student and comparison group students who had graduated from a Mississippi community college/public university and subsequently assumed a job in Mississippi. The estimates indicate that the HELP graduates and their peers in the comparison group did not differ significantly in their earnings levels after controlling for other factors.

Regarding the control variables, male graduates and graduates who completed a bachelor's degree (relative to peers obtaining an AA/AS) were estimated to have significantly higher earnings.

Table 53. OLS Regression Results for Earnings of Students Receiving HELP While Currently Enrolled and Comparison Group Students Who Assumed a Job in MS within One Year of Graduating from a Mississippi Community College/Public University¹

Effect	B	SE	Exp(B)
Intercept	10.71***	0.81	44,968.8
Received HELP	-0.09	0.09	0.91
Gender (Male as Reference)			
Female	-0.29**	0.09	0.75
Race (White as Reference)			
Black	-0.06	0.1	0.94
Other Race	0.16	0.19	1.18
Log of Expected Family Contribution (\$)	0.01	0.02	1.01
Cumulative High School GPA	0.23	0.14	1.26
Cumulative College GPA	-0.03	0.13	0.97
ACT Score	-0.04	0.03	0.96
Received MTAG	-0.2	0.21	0.82
Initial Institution Category (Community College as Reference)			
Four-Year University	-0.02	0.12	0.98
Degree Earned (Bachelor's as reference)			
AAS Technical Degree	0.22	0.14	1.25
Technical/Career Certificate	0.07	0.14	1.07
AA/AS	-0.36**	0.14	0.7
Cohort (2004-2005 as Reference)			
2005-2006	-0.09	0.17	0.91
2006-2007	0	0.15	1
2007-2008	0.07	0.18	1.07
2008-2009	-0.49*	0.23	0.61
2009-2010	-0.24	0.16	0.79
2010-2011	-0.22	0.16	0.8

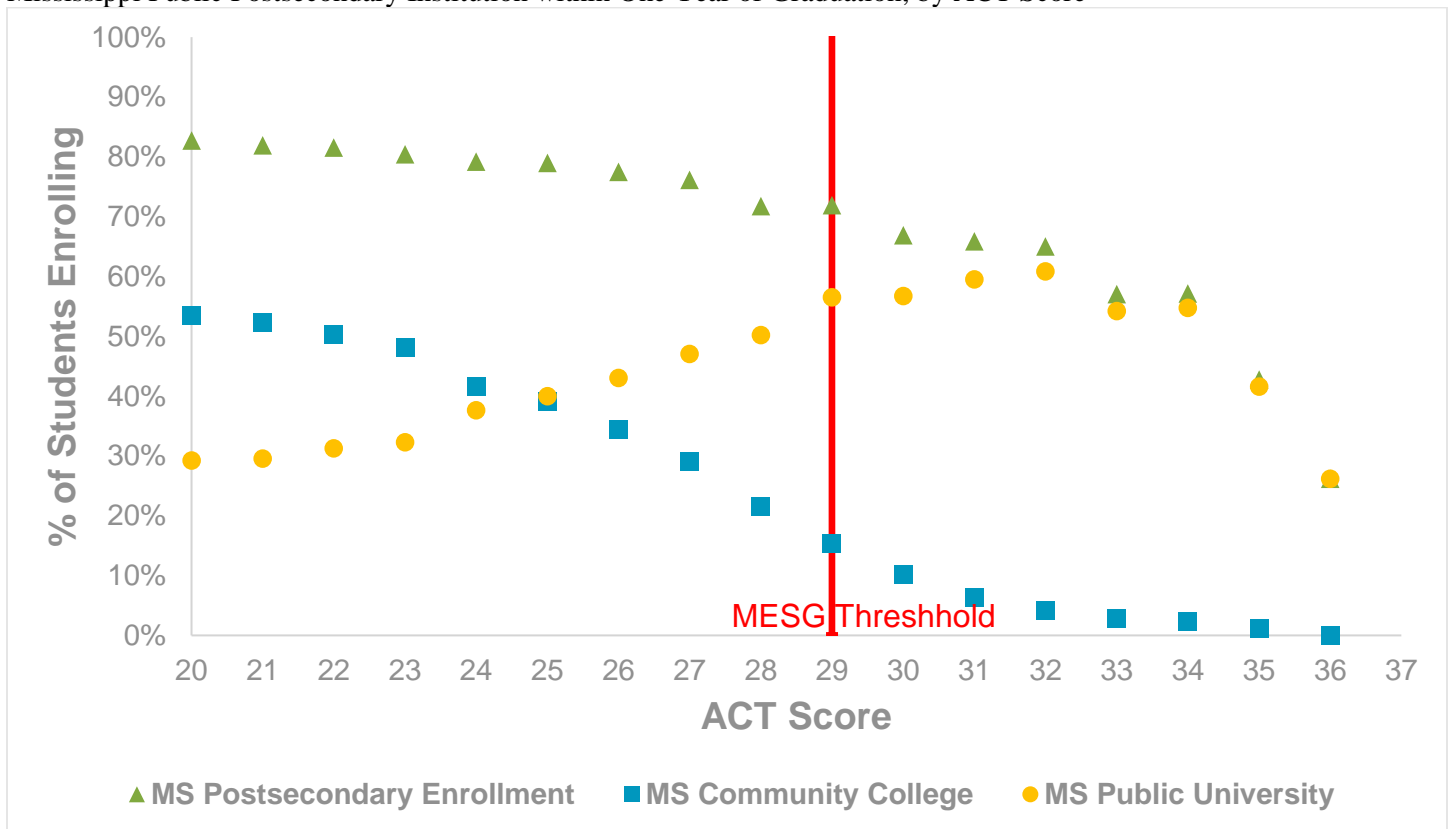
Note: *p<0.05; **p<0.01; ***p<0.001 (two-tailed test)

¹An indicator of MESH receipt is not included as a predictor variable in the regression due to low cell counts.

2. Does the availability of the Mississippi Eminent Scholars Grant increase in-state enrollment of high-achieving students?

Figure 1 shows the percentages of 2004-2005 through 2015-2016 Mississippi high school graduates with a cumulative GPA of at least 3.5 who enrolled in Mississippi community colleges and Mississippi public universities, by ACT score. In the score range displayed (20-36), the overall Mississippi public postsecondary enrollment rate generally falls as ACT score rises, with the decline occurring more rapidly at ACT scores of 32 and above. This general trend represents the combination of community college and public university enrollment patterns. The community college enrollment rate decreases steadily as ACT score rises, while the public university enrollment rate increases up to an ACT score of 32 but tends to decrease thereafter. Regarding the impact of MESG availability on enrollment, it is not clear from the graph whether there is any shift in the overall Mississippi public postsecondary enrollment rate at the MESG threshold score of 29. The same is true for community college enrollment. However, there does appear to be a slight jump in the Mississippi public university enrollment rate at the threshold.

Figure 1. Percentage of Mississippi High School Graduates¹ (2004-2005 through 2015-2016 Cohorts) Enrolling in a Mississippi Public Postsecondary Institution within One Year of Graduation, by ACT Score



¹Only Mississippi high school graduates with a cumulative high school GPA of 3.5 or higher are included.

Table 54 presents the binary logistic regression results for Mississippi high school graduates' enrollment in Mississippi community colleges and Mississippi public universities within one year of graduation. The first set of regression estimates show that the MESH eligibility variable—indicating whether the student had an ACT score of 29 or above—does not have a significant relationship with enrollment in public postsecondary institutions generally (i.e., community colleges and public universities in combination).

The remaining estimates show that MESH eligibility has a significant negative relationship with community college enrollment *and* a significant positive relationship with public university enrollment. These two findings—taken together—suggest that the funding available through MESH leads some high school graduates who would have attended a Mississippi community college to instead enroll in a Mississippi public university.

Table 54. Binary Logistic Regressions of Enrollment in Mississippi Public Postsecondary Institutions

Effect	MS Community College/Public University Enrollment ¹			MS Community College Enrollment ²			MS Public University Enrollment ³	
	B	Standard Error		B	Standard Error		B	Standard Error
Intercept	1.05***	0.02		-1.06***	0.02		0.02	0.02
MESH Eligible	0.04	0.04		-0.19**	0.06		0.31***	0.04
ACT Score ⁴	-0.07***	0.01		-0.18***	0.00		0.14***	0.01
MESH Eligible*ACT Score	-0.09***	0.01		-0.29***	0.03		-0.16***	0.01

¹ Based on cross-validation results, students with an ACT score between 21 and 36 included in the regression.

² Based on cross-validation results, students with an ACT score between 21 and 36 included in the regression.

³ Based on cross-validation results, students with an ACT score between 23 and 35 included in the regression.

⁴ In keeping with standard practice for conducting a regression discontinuity analysis, the ACT score variable included as a predictor in the regressions was calculated by subtracting 28 (i.e., the cut-off ACT score) from students' raw ACT scores. The ACT score variable is thus set equal to 0 for students who scored at the cut-off value, just below the range of MESH eligibility.

**Coefficient is statistically significant at the $p < 0.01$ level.

***Coefficient is statistically significant at the $p < 0.001$ level.

Table 55 shows predicted probability figures for Mississippi community college and Mississippi public university enrollment calculated using the regression results shown in Table 54. The numbers indicate that a student with an ACT score just below the MESG eligibility threshold would be 3.4 percentage points less likely to enroll in a Mississippi community college, and 7.7 percentage points more likely to enroll in a Mississippi public university, if they were MESG eligible.

Table 55. Predicted Probabilities of Enrolling in Mississippi Public Postsecondary Institutions¹

Institution Type	Predicted Probability, MESG-Ineligible	Predicted Probability, MESG-Eligible	Difference in Predicted Probability b/w MESG-Eligible and MESG-Ineligible
MS Community College	25.76%	22.32%	-3.44%
MS Public University	50.54%	58.24%	7.70%

¹In calculating the predicted probabilities, the ACT variable was set at 0 (corresponding to an ACT score of 28).

3. Do forgivable loan recipients stay in appropriate fields of employment after completing the service obligation?

Table 56 presents the rates at which 2004-2005 through 2008-2009 Mississippi public university graduates who had received a William Winter Teacher/Alternate-Route Teacher Forgivable Loan completed the teaching service obligation required to achieve forgiveness for the loan. Among this group of loan recipients, 81.0% fulfilled their service obligation in the time allotted to them (within two or three years of graduation, depending on how many years for which they received the loan). There was some decrease in the rate of service completion across cohorts.

Table 56. Service Obligation Fulfillment Rates of Mississippi Public University Graduates who had received a William Winter Teacher/Alternate-Route Teacher Forgivable Loan (WWTs, WWAR)

Cohort	# Graduating with Bachelor's from MS Public University, having Received a William Winter Forgivable Loan	Completed Service Obligation for William Winter Forgivable Loan	
		N	% ¹
2004-2005	291	249	85.57
2005-2006	334	276	82.63
2006-2007	317	263	82.97
2007-2008	260	208	80.00
2008-2009	281	205	72.95
Total	1,483	1,201	80.98

¹Denominator is the number graduating from a Mississippi public university with a bachelor's degree who had received a William Winter Forgivable Loan in the respective cohort.

Table 57 displays the shares of Mississippi public university graduates receiving a William Winter Teacher/Alternate-Route Teacher Forgivable Loan and completing the associated service obligation who continued teaching in a Mississippi public school in each of the five years following service fulfillment. The percentage that remained employed as a Mississippi public school teacher was 94.1% in the first year after service completion, 87.6% in the second year, 82.6% in the third year, 76.4% in the fourth year, and 73.2% in the fifth year.

Table 57. Employment Retention of Mississippi Public University Graduates after Fulfilling the Service Obligation for a William Winter Forgivable Loan

Cohort	Remained a Mississippi Public School Teacher....									
	1 Year After Service Fulfillment		2 Years After Service Fulfillment		3 Years After Service Fulfillment		4 Years After Service Fulfillment		5 Years After Service Fulfillment	
	N	% ¹	N	% ¹	N	% ¹	N	% ¹	N	% ¹
2004-2005	235	94.38	216	86.75	198	79.52	188	75.5	187	75.1
2005-2006	258	93.48	245	88.77	232	84.06	216	78.26	209	75.72
2006-2007	255	96.96	237	90.11	225	85.55	209	79.47	195	74.14
2007-2008	191	91.83	172	82.69	168	80.77	149	71.63	141	67.79
2008-2009	191	93.17	182	88.78	169	82.44	155	75.61	147	71.71
Total	1,130	94.09	1,052	87.59	992	82.6	917	76.35	879	73.19

¹Denominator is the number graduating from a Mississippi public university with a bachelor's degree who had received and fulfilled the service obligation for a William Winter forgivable loan in the respective cohort.

Table 58 shows the rates at which 2004-2005 through 2008-2009 Mississippi public university graduates who had received an undergraduate-level Nursing Education Forgivable Loan completed the nursing/nursing teacher service obligation required to achieve forgiveness for the loan. Among this group of loan recipients, 81.9% fulfilled their service obligation in the time allotted to them (within two or three years of graduation, depending on how many years for which they received the loan). Service completion rates varied across cohorts without following a clear trend.

Table 58. Service Obligation Fulfillment Rates of Mississippi Public University Graduates Who Received an Undergraduate-Level Nursing Education Forgivable Loan (NELB, NELR)

Cohort	# Graduating with Bachelor's in Nursing from MS Public University, having Received Undergraduate-level Nursing Education Forgivable Loan	Completed Service Obligation for Nursing Education Forgivable Loan	
		N	% ¹
2004-2005	140	116	82.86
2005-2006	122	103	84.43
2006-2007	165	129	78.18
2007-2008	214	177	82.71
2008-2009	205	168	81.95
Total	846	693	81.91

¹Denominator is the number graduating from a Mississippi public university with a nursing bachelor's who received an undergraduate-level Nursing Education Forgivable Loan in the respective cohort.

Table 59 presents the shares of Mississippi public university graduates receiving an undergraduate-level Nursing Education Forgivable Loan and completing the associated service obligation who continued working in the Mississippi nursing field in each of the five years following service fulfillment. The percentage that remained employed as a Mississippi nurse/nursing teacher was 98.6% in the first year after service completion, 90.5% in the second year, 84.9% in the third year, 81.5% in the fourth year, and 79.2% in the fifth year.

Table 59. Employment Retention of Mississippi Public University Graduates after Fulfilling the Service Obligation for an Undergraduate-Level Nursing Education Forgivable Loan

Cohort	Remained Employed in an MS Nursing-Related Industry...									
	1 Year After Service Fulfillment		2 Years After Service Fulfillment		3 Years After Service Fulfillment		4 Years After Service Fulfillment		5 Years After Service Fulfillment	
	N	% ¹	N	% ¹	N	% ¹	N	% ¹	N	% ¹
2004-2005	114	98.28	106	91.38	101	87.07	100	86.21	95	81.9
2005-2006	103	100	92	89.32	87	84.47	84	81.55	81	78.64
2006-2007	126	97.67	117	90.7	111	86.05	110	85.27	110	85.27
2007-2008	173	97.74	160	90.4	151	85.31	139	78.53	140	79.1
2008-2009	167	99.4	152	90.48	138	82.14	132	78.57	123	73.21
Total	683	98.56	627	90.48	588	84.85	565	81.53	549	79.22

¹Denominator is the number graduating from a Mississippi public university with a nursing bachelor's who received and fulfilled the service obligation for an undergraduate-level Nursing Education Forgivable Loan in the respective cohort.

Table 60 displays the rates at which 2007-2008 through 2009-2010 Mississippi public university graduates who received a graduate-level Nursing Education Forgivable Loan completed the nursing/nursing teacher service obligation required to achieve forgiveness for the loan. Among this group of loan recipients, 91.2% fulfilled their service obligation in the time allotted to them (within two, three, or four years of graduation, depending on how many years for which they received the loan). Service completion rates rose across cohorts.

Table 60. Service Obligation Fulfillment Rates of Mississippi Public University Graduates who had Received a Graduate-Level Nursing Education Forgivable Loan (NELM, NERM, NELP)

Cohort	# Graduating with Master's/Doctorate in Nursing from MS Public University, having Received Graduate-level Nursing Education Forgivable Loan	Fulfilled Service Obligation for Nursing Education Forgivable Loan	
		N	% ¹
2007-2008	57	49	85.96
2008-2009	50	47	94.00
2009-2010	18	18	100.00
Total	125	114	91.20

¹Denominator is the number graduating from a Mississippi public university with a nursing master's/doctorate who had received a graduate-level Nursing Education Forgivable Loan in the respective cohort.

Table 61 shows the shares of Mississippi public university graduates receiving a graduate-level Nursing Education Forgivable Loan and completing the associated service obligation who continued working in the Mississippi nursing field in each of the three years following service fulfillment. The percentage that remained employed as a Mississippi nurse/nursing teacher was 100% in the first year after service completion, 96.5% in the second year, and 94.7% in the third year.

Table 61. Employment Retention of Mississippi Public University Graduates after Fulfilling the Service Obligation for a Graduate-Level Nursing Education Forgivable Loan

Cohort	Remained Employed in an MS Nursing-Related Industry...					
	1 Year After Service Fulfillment		2 Years After Service Fulfillment		3 Years After Service Fulfillment	
	N	% ¹	N	% ¹	N	% ¹
2007-2008	49	100.00	47	95.92	46	93.88
2008-2009	47	100.00	46	97.87	45	95.74
2009-2010	18	100.00	17	94.44	17	94.44
Total	114	100.00	110	96.49	108	94.74

¹Denominator is the number graduating from a Mississippi public university with a nursing master's/doctorate who had received and fulfilled the service obligation for a graduate-level Nursing Education Forgivable Loan in the respective cohort.

Table 62 presents the results on the service obligation fulfillment rates of individuals who had received an SREB Regional Contract Forgivable Loan for optometry studies for four consecutive years ending in 2006-2007, 2007-2008, or 2008-2009. While a total of 22 students received the SREB loan for this length of time among these cohorts, the number of those who completed the associated service obligation was less than 10, and thus cannot be reported.

Table 62. Service Obligation Fulfillment Rates of Individuals who Received an SREB Regional Contract Forgivable Loan (Optometry) for Four Consecutive Years

Cohort	Total # Receiving SREB Loan for Four Consecutive Years	Fulfilled Service Obligation for SREB Loan	
		N	% ¹
2006-2007	<10	<10	-
2007-2008	<10	<10	-
2008-2009	<10	<10	-
Total	22	<10	-

¹Denominator is the number receiving an SREB Regional Contract Forgivable Loan for four consecutive years in the respective cohort.

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APPENDIX A: BALANCE BETWEEN AID-RECEIVING GROUPS AND COMPARISON GROUPS

Table A1. Covariate Balance Between Students Receiving MTAG as an Entering Degree-Seeking Freshman and the Comparison Group

Covariate	MTAG Recipients		Comparison Group	
	N	% ¹	N	% ²
Enrollment Intensity				
Full-Time	34,971	100.00	10,103	100.00
Part-Time	0	0.00	0	0.00
Gender				
Male	14,041	40.15	4,056	40.15
Female	20,930	59.85	6,047	59.85
Race				
White	27,709	79.23	8,005	79.23
Black	6,292	17.99	1,818	17.99
Other Race	970	2.77	280	2.77
Expected Contribution				
= 0	0	0.00	0	0.00
>0 but ≤ Pell Max.	11,591	33.14	3,349	33.15
>Pell Max.	23,380	66.86	6,754	66.85
High School GPA				
0-2.49	0	0.00	0	0.00
2.50-3.29	14,424	41.25	4,167	41.25
3.30+	20,547	58.75	5,936	58.75
ACT Score				
1-14	0	0	0	0
15-25	29,025	83.00	8,385	83.00
26-36	5,946	17.00	1,718	17.00
Initial Institution Category				
Community College	22,777	65.13	6,580	65.13
Four-Year University	12,194	34.87	3,523	34.87

¹Denominator is the total number of MTAG students.

²Denominator is the total number of comparison group students. These percentages may not exactly equal the quotient obtained by dividing the reported numerator by the total number of comparison students because the numerator is displayed rounded to the nearest integer.

Table A2. Covariate Balance Between Students Receiving MTAG as a Current College Student and the Comparison Group

Covariate	MTAG Recipients		Comparison Group	
	N	% ¹	N	% ²
Enrollment Intensity				
Full-Time	1,044	100.00	1,819	100.00
Part-Time	0	0.00	0	0.00
Gender				
Male	422	40.42	735	40.41
Female	622	59.58	1,084	59.59
Race				
White	801	76.72	1,396	76.75
Black	203	19.44	354	19.46
Other Race	40	3.83	70	3.85
Expected Family Contribution				
= 0	0	0.00	0	0.00
>0 but ≤ Pell Max.	564	54.02	983	54.04
>Pell Max.	480	45.98	836	45.96
College GPA				
0-2.49	0	0.00	0	0.00
2.50-3.29	565	54.12	984	54.10
3.30+	479	45.88	835	45.90
Initial Institution Category				
Community College	815	78.07	1,420	78.06
Four-Year University	229	21.93	399	21.94
Current Institution Category				
Community College	695	66.57	1,211	66.58
Four-Year University	349	33.43	608	33.42

¹Denominator is the total number of MTAG students.

²Denominator is the total number of comparison group students. These percentages may not exactly equal the quotient obtained by dividing the reported numerator by the total number of comparison students because the numerator is displayed rounded to the nearest integer.

Table A3. Covariate Balance Between Students Receiving MESG and the Comparison Group

Covariate	MESG Recipients		Comparison Group	
	N	% ¹	N	% ²
Enrollment Intensity				
Full-Time	2,304	100.00	286	100.00
Part-Time	0	0.00	0	0.00
Gender				
Male	1,104	47.92	137	47.90
Female	1,200	52.08	149	52.10
Race				
White	2,202	95.57	273	95.45
Black	45	1.95	6	2.10
Other Race	57	2.47	7	2.45
Expected Family Contribution				
=0	144	6.25	18	6.29
>0 but ≤ Pell Max	322	13.98	40	13.99
>Pell Max	1,838	79.77	228	79.72
High School GPA				
0-3.49	0	0.00	0	0.00
3.5+	2,304	100.00	286	100.00
ACT score				
1-28	0	0.00	0	0.00
29-36	2,304	100.00	286	100.00
Initial Institution Category				
Community College	328	14.24	41	14.34
Four-Year University	1,976	85.76	245	85.66

¹Denominator is the total number of MESG students.

²Denominator is the total number of comparison group students. These percentages may not exactly equal the quotient obtained by dividing the reported numerator by the total number of comparison students because the numerator is displayed rounded to the nearest integer.

Table A4. Covariate Balance Between Students Receiving HELP as an Entering Degree-Seeking Freshman and the Comparison Group

Covariate	HELP Recipients		Comparison Group	
	N	% ¹	N	% ²
Enrollment Intensity				
Full-Time	403	100.00	13,674	100.00
Part-Time	0	0.00	0	0.00
Gender				
Male	148	36.72	5,022	36.73
Female	255	63.28	8,652	63.27
Race				
White	246	61.04	8,347	61.04
Black	143	35.48	4,852	35.48
Other Race	14	3.47	475	3.47
Expected Family Contribution				
=0	154	38.21	5,225	38.21
>0 but \leq Pell Max	249	61.79	8,449	61.79
> Pell Max	0	0.00	0	0.00
High School GPA				
0-2.49	0	0.00	0	0.00
2.50-3.29	94	23.33	3,189	23.32
3.30+	309	76.67	10,485	76.68
ACT Score				
1-19	0	0.00	0	0.00
20-25	297	73.70	10,077	73.69
26-36	106	26.30	3,597	26.31
Initial Institution Category				
Community College	109	27.05	3,698	27.04
Four-Year University	294	72.95	9,976	72.96

¹Denominator is the total number of HELP students.

²Denominator is the total number of comparison group students. These percentages may not exactly equal the quotient obtained by dividing the reported numerator by the total number of comparison students because the numerator is displayed rounded to the nearest integer.

Table A5. Covariate Balance Between Students Receiving HELP as a Current College Student and the Comparison Group

Covariate	HELP Recipients		Comparison Group	
	N	% ¹	N	% ²
Enrollment Intensity				
Full-Time	150	100.00	3,150	100.00
Part-Time	0	0.00	0	0.00
Gender				
Male	44	29.33	924	29.33
Female	106	70.67	2,226	70.67
Race				
White	77	51.33	1,617	51.33
Black	62	41.33	1,302	41.33
Other Race	11	7.33	231	7.33
Expected Family Contribution				
=0	109	72.67	2,289	72.67
>0 but ≤ Pell Max	41	27.33	861	27.33
> Pell Max	0	0.00	0	0.00
High School GPA				
0-2.49	0	0.00	0	0.00
2.50-3.29	23	15.33	483	15.33
3.30+	127	84.67	2,667	84.67
College GPA				
0-2.49	0	0.00	0	0.00
2.50-3.29	64	42.67	1,344	42.67
3.30+	86	57.33	1,806	57.33
ACT Score				
1-19	0	0.00	0	0.00
20-25	124	82.67	2,604	82.67
26-36	26	17.33	546	17.33
Initial Institution Category				
Community College	55	36.67	1,155	36.67
Four-Year University	95	63.33	1,995	63.33

¹Denominator is the total number of HELP students.

²Denominator is the total number of comparison group students. These percentages may not exactly equal the quotient obtained by dividing the reported numerator by the total number of comparison students because the numerator is displayed rounded to the nearest integer.