

Helping Outstanding Pupils Educationally:
Public Policy Issues of the Georgia HOPE
Scholarship Program and the
Lottery for Education

Ross Rubenstein

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Ross Rubenstein is Associate Professor of Public Administration and Senior Research Associate of the Center for Policy Research, Maxwell School, Syracuse University. He is also affiliated with the Center's Education Finance and Accountability Project (EFAP). His research focuses on education policy and public finance, specifically funding equity and adequacy in education, public-sector performance, and merit-based financial aid for college.

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Policy Brief

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The HOPE (Helping Outstanding Pupils Educationally) scholarship program, which began in 1993, is one of the most popular public policies ever enacted in the state of Georgia. This lottery-funded program pays for tuition, fees, and books at any public college or university in the state for any Georgia student who graduates from high school with a B or better grade point average (GPA). To keep the scholarship, students must maintain the B or better GPA in college. The program's popularity has spread beyond well Georgia's borders; at least a dozen other states have instituted similar broad-based merit scholarship programs, and most state legislatures have considered legislation to start similar programs. The federal HOPE tax credit, established in 1997, took its name from Georgia's program, though the originally-proposed merit-based component of the program was not enacted.

In light of its popularity, HOPE raises a number of important policy questions regarding both the program itself and its funding source, the Georgia Lottery for Education:

1. What effect has the HOPE Scholarship program had on student performance in high school?
2. What effect has the HOPE Scholarship program had on student performance in college?
3. Who pays for and who benefits from the Georgia lottery and the programs it funds?

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4. Has the scholarship program caused inflation in the cost of higher education in Georgia?

This policy brief describes the HOPE Scholarship program and the Georgia Lottery for Education, summarizes a series of studies examining the program, offers recommendations for the design of merit-based financial aid programs, and suggests topics for further research.

History of the Program

Goals

According to Shelly Nickel (2003), executive director of the Georgia Student Finance Commission (the agency that administers HOPE), the goals of the HOPE Scholarship program were to:

- provide students an incentive for better high school performance,
- increase college attendance among well-qualified students, and
- improve persistence and graduation rates by providing financial aid while students attend college.

Prior to the start of HOPE, Georgia ranked near the bottom of all states in publicly funded financial aid for higher education. The HOPE program represented a dramatic increase in such aid. Since 1993, Georgia has consistently provided more state financial aid per full-time equivalent student than any other state (see NASSGAP, 2003).

Funding

The Georgia Lottery for Education was established in 1993 following voter approval of a state constitutional amendment to permit a lottery. The lottery's primary proponent was then-Georgia governor Zell Miller, who made it a key issue of his 1990 campaign for governor. Unlike most states, which target

lottery proceeds for broad program areas such as education or health care, revenue from the Georgia lottery is earmarked for specific programs: the HOPE Scholarship program and universal pre-kindergarten for four-year-olds. Neither program existed before the lottery and both are entirely funded with lottery revenue. Any revenue remaining after funding those programs is used for school construction and technology outlays.

In the early years of the lottery, the HOPE and pre-K programs were relatively small and the lottery provided substantial resources for educational and technological infrastructure, such as satellite dishes for schools. In 1998, Georgia voters approved a state constitutional amendment giving HOPE and pre-K first claim on all lottery proceeds. Over time, HOPE and pre-K have grown to the point that, in the 2003 budget, all lottery revenue was appropriated for these two programs.

Georgia's lottery has been an enormously successful revenue generator, posting revenue increases in each of its first seven years of existence. However, concerns have begun to surface that demand for the lottery-funded programs will soon outstrip revenue. In 2003, the Georgia General Assembly established a Joint Study Commission to examine ways to increase revenues or decrease expenditures to ensure sufficient funding for the program in the future.

Scholarship Provisions

Currently the HOPE Scholarship program pays full tuition, mandatory fees, and a \$300 per year book allowance for Georgia students who enroll in public colleges and universities in the state. It pays a flat \$3,000 scholarship for eligible students who enroll in private colleges and universities in Georgia. Student progress in college is monitored after every 30 credits attempted (approximately one year), and students must maintain the cumulative B average (3.0 on a 4.0 scale) at every checkpoint. Students whose cumulative college GPA fall below a B lose their

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scholarship, though they can regain the scholarship by bringing their GPA above 3.0 at the next checkpoint.

The lottery also funds the HOPE Grant program for students enrolling in non-degree programs at public technical institutes. Unlike the HOPE Scholarship program, the HOPE Grant program has no merit-based component and all students are eligible regardless of high school or post-secondary grades.¹

Changes since 1993

The HOPE Scholarship program has undergone several important changes since its inception. In the first year of the program, eligibility was based on both merit and need; only students with family income below \$66,000 per year were eligible. The income cap was raised to \$100,000 in 1994 and eliminated entirely in 1995.

The program is now entirely merit-based, with no need-based component. Therefore, to the extent that students from middle and upper income families are more likely to aspire to college and to earn the grades necessary for eligibility, the scholarship funds flow disproportionately to middle and upper income families. However, lower income students still receive substantially more aid through HOPE than they did previously. Longanecker (2002) estimates that lower income students receive approximately \$45 million in aid through HOPE, as compared to \$3 million in need-based aid before the program began.

Prior to 2000, HOPE Scholarships for lower income students who qualified for Pell Grants—the major federal financial aid program for students from low-income families—were reduced by the amount of Pell aid received. Thus, for many lower income Georgia students, Pell Grants paid for tuition and fees, and they received only the book allowance from HOPE. Beginning with the class of 2000, the HOPE program’s controversial “Pell carve-out” was eliminated. Eligible students can now “stack” the two scholarships, receiving the full amounts of both HOPE and Pell for which they qualify. In that same year, the initial eligibility

requirement was changed from a B average in all high school courses to a B average in the core academic courses required for high school graduation. Future research will look at the impact of these changes.

Examining the Program's Effects

The HOPE Scholarship program drastically changed the incentives facing both students and higher education institutions. Along with the intended policy goals of improved student performance in high school and college, the program may have produced a number of unintended, even unwanted, side effects. The next section provides an overview of research on both the student-level effects and institutional issues surrounding the program. Key dates to remember are: the program began in 1993, the income cap was removed in 1995, and the first class to be aware of HOPE throughout all four years of high school graduated in 1997.

Student Performance in High School

While most recent school accountability efforts have focused on both rewards and sanctions for teachers and schools, students have primarily been subjected to sanctions alone (e.g., being retained in grade or prevented from graduating). In contrast, the HOPE Scholarship program provides a powerful reward for good performance—a free college education. The clearly defined and readily attainable eligibility criteria, as well as the generous benefits, arguably should provide a strong incentive for students to increase their effort in high school in order to earn the scholarship.

Evidence suggests that this may, in fact, have happened. In 1995, the first year in which any student was eligible for HOPE based solely on merit, 54.7% of Georgia's 59,736 high school graduates qualified for the scholarship. By 1999, the number of high school graduates had grown by about 10% but the fraction qualifying for

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HOPE had grown by 23% to 61.4% of total graduates (Henry and Rubenstein 2002).

Does this represent a real improvement in high school student performance? Maybe not. If teachers feel pressure from students, parents, or administrators to “help” a larger proportion of students to receive the scholarship, they may respond by lowering standards and inflating student grades without a related increase in student effort or performance. To assess this possibility, student grades must be compared to a measure of student performance that is not susceptible to potential grade inflation. While SAT scores are not an ideal indicator of student performance, they do provide such a measure.

The SAT, formerly the Scholastic Assessment Test, is a nationally recognized, standardized examination administered by the College Board. It tests “verbal and mathematical reasoning skills students have developed over time both in and out of school” (College Board 2003). The two components (verbal and mathematical) are tested separately; scores range from 200 to a perfect score of 800 for each component. The maximum score, therefore, is 1600.

Since grade inflation would affect only student grades but not SAT scores, average SAT scores for B or better students would be expected to decline over time in the presence of grade inflation. That is, students who, before HOPE, earned a C (or D) would earn an A or B after HOPE but retain the SAT scores of a C or D student. Therefore, systematic grade inflation would cause average SAT scores for students to decline over time, particularly near the 3.0 eligibility cutoff.

Average SAT scores for students reporting a B or better high school GPA rose slightly nationwide (from 1013 to 1015) between 1990 and 1994, and declined slightly in Georgia (from 987 to 983) and the rest of the South (1040 to 1037), suggesting there may have been a trend toward grade inflation, at least in the South, even before the HOPE program.² Starting in 1994, one

year after HOPE began, the trend reversed and average SAT scores for these students began to rise: by 6 points nationwide, 9 points in other southern states, and 12 points in Georgia during the period 1994-2000 (Henry and Rubenstein 2002).³ The trend in Georgia appears to have differed from that in other states over the same period. However, these are aggregate data and include only self-reported high school GPA.

Henry and Rubenstein (2002) took their research one step further. They compiled data on Georgia students who graduated from high school between 1989 and 1999 and assessed trends in SAT scores relative to grades in the pre-HOPE and post-HOPE periods (1989-1992 and 1993-1999 respectively), controlling for background characteristics—race, gender, and high school preparation—of the students. They used regression analysis to measure the relationship between SAT scores and high school grades, controlling for differences in student background that might affect this relationship, and to isolate the effect of being just above and below the eligibility cutoff (3.0 GPA). The interaction terms in the model allowed them to examine whether the trend lines differed for the race and gender subgroups they examined. Table 1 reports their findings.

White males consistently scored highest, followed by white females, black males, and black females. As might be expected, the groups with 3.1 GPA consistently achieved higher SAT scores than their racial and gender equivalents with 2.9 GPA.

Scores for white males and females declined from 1989 to 1996, then began increasing consistently starting in 1997, the first year in which students would have been aware of HOPE throughout their high school career. The overall result was flat or a decline in scores from 1989 to 1999. Scores for black male students declined slightly in the pre-HOPE period, while black female students gained slightly. Starting in 1993, scores for both black males and black females began to increase, with total increases of 25 to 42 points over the whole span. As with white students, SAT scores for borderline students showed a consistent annual

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increase between 1997 and 1999. At the same time, the total number of students earning the scholarship increased considerably, as discussed earlier.

Table 1. Estimated SAT scores of Georgia high school graduates with 3.1 and 2.9 GPA, by race and gender, 1989-1999				
Year	White		Black	
	Male 3.1/2.9 GPA	Female 3.1/2.9 GPA	Male 3.1/2.9 GPA	Female 3.1/2.9 GPA
1989	1090/1064	1021/995	951/925	882/856
1990	1086/1060	1014/989	940/915	888/862
1991	1081/1056	1013/987	927/901	892/866
1992	1080/1054	1014/988	940/914	893/868
1993	1084/1056	1011/983	950/922	890/862
1994	1090/1062	1011/983	963/935	903/875
1995	1082/1054	1014/986	953/925	905/876
1996	1080/1051	1012/984	973/945	920/892
1997	1073/1043	1004/974	964/934	910/880
1998	1087/1057	1008/978	972/942	918/887
1999	1092/1062	1015/984	980/950	924/894
SAT score change				
1989-1993	-6/-8	-10/-12	-1/-3	8/6
1993-1997	-11/-13	-7/-9	14/12	20/18
1997-1999	19/19	11/10	16/16	14/14
1989-1999	2/-2	-6/-11	29/25	42/38
Notes: 1993 = HOPE introduced; 1995 = income cap removed; 1997 = first graduating class that started after HOPE introduction.				
Source: Henry and Rubenstein (2002), using data from the Georgia Student Finance Commission and the Georgia Board of Regents.				

Despite fears that the HOPE Scholarship program might harm Georgia's educational system by promoting rampant grade inflation, the available evidence suggests that grade inflation has not increased as a result of the scholarship. Though no direct evidence on student motivation is available, it appears that students may be responding to the HOPE Scholarship's incentive by devoting more effort to their high school studies. While an indirect incentive for teachers to inflate grades may exist, it is quite possible that the effects of the direct incentive for students to work harder swamp the effects of the indirect incentive for teachers to inflate student grades.

Student Performance in College

The HOPE Scholarship Program acts as a higher education reform as well as a secondary education reform. While any

effects in high school may be due solely to the incentive effect of the merit requirement, potential effects on students in college could be caused by both the merit requirement and the financial aid the program provides. Analysis of the program's effects, though, is also complicated by difficult selection bias issues. Since only higher-achieving high school students receive the scholarship, HOPE recipients would be expected to have better academic performance in college regardless of any scholarship effects.

To address this problem, Henry, Rubenstein, and Bugler (2003) compared students just above and just below the high school eligibility threshold from the high school class of 1995. They matched students based on their high school GPA in core courses required for graduation, which best reflects their performance in academic courses, and compared students who received the HOPE Scholarship to those who did not. Though the matched students had equivalent core course GPAs, half did well enough in their non-core courses to earn the scholarship while half did not. The authors then compared student performance through four years of college on four outcome measures: credit accumulation in college, college GPA, probability of graduation after four years, and probability of persistence after four years for those who had not graduated.

Credit Accumulation and GPA

Regressing college credit accumulation and college GPAs on a variety of control variables and a dichotomous variable indicating whether each student received a HOPE Scholarship out of high school, the authors found that HOPE recipients earned an average of about 14 more credits over four years compared to non-recipients, which is the equivalent of just over one three-credit course per year. Comparing four-year college GPAs for HOPE recipients and non-recipients, they found that HOPE recipients also exhibited slightly higher four-year college GPAs, with a difference of approximately .17 points on a four-point scale.

Graduation Rates and Persistence

Using logistic regression models to examine the probability of graduating after four years, Henry, Rubenstein, and Bugler (2003) found a significant difference in graduation rates between HOPE recipients and non-recipients at both two-year and four-year institutions. The predicted odds of graduation after four years were almost twice as high for HOPE recipients as for non-recipients at two-year colleges and 72 percent higher at four-year institutions.

In both cases, it is possible that the HOPE financial aid allows students to devote more time to school relative to work and thus earn a degree more quickly. It is also possible these differences may decline over five or six years, but data are not available to measure this difference.

Additional analyses comparing persistence (continuing in college) after four years for those students who did not graduate found little difference between HOPE recipients and non-recipients. HOPE recipients are no more likely to persist in two-year institutions and only slightly more likely to persist at four-year colleges.

Scholarship Retention

While these analyses compare students who initially earned a HOPE Scholarship to those who did not, they overlook an important issue: most students who initially qualify for the scholarship lose it in college. Almost two-thirds of the class of 1995 who entered college with a HOPE Scholarship were unable to maintain eligibility for four years, and the majority of those students lost their scholarship after the first year. If the scholarship is to have substantial benefits for college students, *keeping* the scholarship is probably as important as *earning* it initially.

However, analyses comparing students who earned the scholarship and lost it to those who did not initially earn it show

that losing the scholarship reduces slightly, but does not eliminate, the effect of earning the scholarship initially. When students who kept the scholarship for four years were removed from the sample, students who earned the scholarship initially but lost it accumulated an average of 12.4 credits more than students who never received the scholarship. Similarly, students who lost the scholarship had an average GPA of .14 points higher than non-recipients after four years, as compared to .17 points when students who kept the scholarship were included.

Losing the scholarship reduced the probability of graduation for students at two-year colleges (as compared to the previous analyses that included all HOPE recipients), and eliminated the difference in graduation rates at four-year colleges. No difference was found in persistence rates for students who lost the scholarship as compared to those who did not receive it initially.

Summary

These analyses suggest that HOPE could have a positive impact on student performance in college, but that keeping the scholarship is important to the realization of these potential benefits. While borderline HOPE recipients accumulated more credits and earned a higher college GPA than did borderline non-recipients, the differences were most pronounced for the relatively small group of students who were able to keep the scholarship for four years. Students who lost the scholarship still graduated from two-year institutions at a significantly higher rate than did non-recipients, but losing the scholarship eliminated any differences in graduation rates and persistence at four-year schools. This result may not be surprising, since having a scholarship for one year should have a larger impact for students in two-year schools than for those in four-year schools. Overall, however, these results may present an upper bound on HOPE's effects in college since they reflect the behavior of only those students who might be most likely to respond to the merit requirement—students “on the borderline” who are most at risk of losing their scholarships.

Institutional Effects

The Distribution of Costs and Benefits

While a large body of research has examined the incidence of lotteries' implicit taxation, little research has examined the incidence of benefits from lottery-funded programs. Georgia's Lottery for Education offers a unique opportunity to explore this issue because, unlike other states that earmark lottery revenue for broad program areas, Georgia's lottery revenue is designated for clearly defined programs, two of which—HOPE Scholarships and pre-kindergarten—are funded exclusively by the lottery. This type of earmarking reduces concerns about fungibility of revenues and facilitates tracking of benefits to individuals.

Rubenstein and Scafidi (2002) compared household spending on the Georgia lottery to estimated benefits from lottery programs in 1999. They collected household survey data on lottery purchases to examine the factors that affect the probability of playing the lottery, and average household spending, contingent on playing. Using a probit model to examine factors that affect lottery play, they found that upper income households (over \$35,000 per year) and homeowners are significantly more likely to play the lottery, while those who attend religious services every week are less likely to play. Using the results from the first-stage probit model, they estimated average household lottery spending contingent on playing and found that non-white households spend significantly more on the lottery than do white households, indicating that, while non-white households do not have a significantly higher probability of playing the lottery, they tend to spend significantly more per household when they do play.

Rubenstein and Scafidi (2002) then used county-level demographic data and expenditures on lottery-funded programs to estimate average household benefits from each of the programs. They found that, overall, white and higher income households receive significantly larger benefits, on average, from lottery-funded programs, and that, of the lottery-funded

programs, HOPE Scholarship benefits are the most strongly associated with household characteristics. Using the results of the two sets of models, they estimated “net benefits” (estimated benefits from lottery-funded programs less spending on lottery games, net of winnings).

Table 2, comparing net benefits by race, shows that while there is a small net benefit across all Georgia households (perhaps due, in part, to the large number of out-of-state players), only white households realize positive net benefits. For non-white households, spending on lottery games tends to exceed the benefits received from lottery-funded programs. Looking at the results by income classes, the largest net benefits accrue to households in the highest income category, while households earning below \$25,000 per year tend to spend more than they receive in benefits.

Table 2. Distribution of household spending on lottery products, benefits of lottery funded programs, and the net budgetary incidence of the Georgia lottery for education			
Group	Mean Predicted Net Spending	Mean Predicted Benefit	Mean Predicted Net Spending
All households	155.52	205.12	49.60
Whites	132.99	248.39	115.40
Non-whites	220.68	80.01	-140.67
Income			
<\$15K	270.84	110.29	-160.55
≥\$15K - <\$25K	323.16	138.35	-181.81
≥\$25K - <\$35K	90.45	169.89	79.44
≥\$35K - <\$50K	236.57	196.15	-40.42
≥\$50K - <\$75K	143.62	257.43	113.81
≥\$75K	-39.46	344.43	373.89
Source: Rubenstein and Scafidi 2002, table 7.			

These results suggest that the Georgia lottery and its programs have substantial redistributive consequences and that, on the benefit side, the redistribution is largely driven by the HOPE Scholarship program. An important caveat to this conclusion is that, in the year examined in the paper (1999), HOPE benefits were subject to the Pell Grant “carve-out.” Therefore, as described earlier, lower income students received little funding

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from HOPE if they were eligible for Pell Grants. Elimination of the carve-out provision was intended to allow more funding to flow to lower income students. Therefore, lower income households are likely to receive larger benefits, on average, from HOPE now, as compared to the year in this study. Changes in HOPE eligibility, though, will likely have little or no effect on patterns of lottery play and spending.

Effects on the Price of College

Former Secretary of Education William Bennett, in a 1987 *New York Times* editorial, wrote that that “increases in financial aid in recent years have enabled colleges and universities blithely to raise their tuitions” (Bennett, 1987). His argument, which focused on federal financial aid, was premised on the idea that higher education institutions would respond to the presence of more generous financial aid by raising their tuition and fees to capture the additional benefits of the aid. In this scenario, financial aid would drive inflation in higher education costs, particularly harming those who pay the “sticker price”—the full price of tuition and fees. If cost increases outstrip financial aid increases, then even those who receive financial aid would face higher average out-of-pocket expenses (“net prices”).

Federal financial aid programs, such as Pell Grants, do not provide a very strong test of this so-called “Bennett hypothesis.” The maximum award is typically well below the tuition price at even most public universities. Increases in the maximum award over time have been relatively small, and there is no natural comparison group since students throughout the United States can receive the grants. The HOPE Scholarship program, however, provides an interesting test of this hypothesis because it was a large discontinuous change in financial aid policies, and because the amount of the award at Georgia public universities is based entirely on the sticker price of tuition and fees.

Scafidi, Rubenstein, Schwartz, and Henry (2003) used this “natural experiment” to examine the effect of financial aid

awards on the price of college. Specifically, they used a “difference in differences” approach to compare changes in the sticker price and net price of college in Georgia before and after the start of the HOPE program to changes in the price of college in other states over the same period. A significant increase in Georgia prices relative to the rest of the country would provide some evidence to support the Bennett hypothesis.

The authors used nine years of data from the College Board’s Annual Survey of Colleges (ASC) for the academic years 1989-90 to 1997-98 to estimate the empirical models. These models include a number of time-varying college characteristics that may affect prices, such as faculty characteristics, pupil-faculty ratios, student characteristics, and student life factors such as athletic participation, along with fixed effects to capture the effect of unobserved time-invariant factors. Schools were categorized as *selective* or *non-selective*, and *public* or *private*.⁴ The results of their analyses suggest that the sticker price of public colleges in Georgia was gradually declining relative to the nation in the years before the HOPE program began, and they continued to decline in non-selective colleges afterward. For selective public colleges, sticker prices in Georgia were lower before HOPE and remained lower than the rest of the nation in the post-HOPE period, but they did not decline further. The analyses also find that net prices fell for both selective and non-selective public colleges in Georgia after the HOPE program began. For non-selective schools, the post-1992 decline (the last pre-HOPE year) was statistically significant. For selective colleges the decline relative to 1992 was significant only in 1996 and 1997. Given the dramatic increase in financial aid per student from the HOPE program, it is not surprising that average out-of-pocket-costs for tuition and fees fell significantly after the program began.⁵

Selective private colleges in Georgia charged higher sticker prices than the rest of the nation both before and after HOPE, and the price increased substantially in the post-HOPE years, though the increase was not statistically significant. Sticker prices for non-selective private colleges declined, but not significantly,

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after HOPE. As for public colleges, net prices for non-selective private colleges in Georgia were lower than the rest of the nation and moved relatively lower (though not significantly) in the post-HOPE years.

The analyses provide little support for the hypothesis that increased financial aid would lead to inflation in tuition prices. In Georgia, which experienced an enormous increase in financial aid through the HOPE Scholarship program, sticker prices of public universities were largely unaffected by the increased aid and net prices fell dramatically. While public colleges would seem to have stronger incentives than private colleges to raise prices under HOPE, these analyses found a possible inflationary effect only in the private sector. The reason could be related to political and institutional factors in the public sector, where tuition and fee policy is considerably more constrained than in the private sector. While public institutions can largely set their own fees (but not tuition), they may feel pressured to keep prices down, since increases would create additional pressure on the state's lottery and potentially sap funding from other programs. Though the private sector provides some evidence that sticker prices did increase after the start of the program, net prices again fell, relative to the rest of the country. Thus, while some students likely paid more for college in the private sector, the "average" student actually paid less for tuition and fees.

Implications for Merit-Based Financial Aid Policy

The many states implementing or considering broad-based merit scholarship programs have looked to Georgia's experiences to design their own programs. Even states implementing other types of accountability systems based on student achievement, such as New York State's requirement for all students to pass a series of Regents examinations to qualify for graduation, might learn from Georgia's experience with increasing student responsibility for performance.

The effectiveness of merit-based aid can only be assessed in relation to the goals of the program, which are often only vaguely defined. If, for example, a fundamental goal is to increase student access to higher education, particularly for students from traditionally under-represented groups, then merit-based aid is unlikely to be an effective or efficient way to achieve this goal. As described by Dynarski (2000) and Cornwell, Mustard, and Sridhar (2001), most of Georgia's aid has flowed to students who would have gone to college even in the absence of the scholarship and may have induced increases in attendance rates only among white students.⁶ If designed well, though, merit aid programs can provide strong performance incentives for students and their families. Outlined below are a number of considerations in the design of merit-based financial aid programs:

- *Provide explicit, achievable goals for students.* Georgia's HOPE Scholarship program is perhaps the most well-known entitlement program in that state. Surveys have revealed that the majority of families in the state can describe the program and its eligibility requirements (Henry and Gordon, 1999). To function effectively as an incentive, students and their families must clearly understand how to earn the scholarship. Moreover, the "B or better" criterion offers the promise of a scholarship to virtually every student who puts forth effort in high school, providing incentives for even lower performing students to improve their grades. While higher achieving students may have little concern about earning the scholarship, increased competition for admission to one of the state's public research universities may still provide important motivation.
- *Base eligibility on broad indicators of student performance rather than a single high stakes test.* To provide effective motivation, students must be able to monitor progress toward their goal, and to change their behavior when they are in danger of not achieving that goal. Because HOPE Scholarships are based on four years of high school grades, students have ample opportunity to increase their effort if they

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are falling behind. Eligibility based on graduation tests, for example, provides little feedback for students until they near the end of high school, when it's too late to change. Well designed end-of-course tests given throughout high school could also provide an effective tool for identifying eligible students while still providing opportunities for students to respond to the feedback the tests provide.

- *Base eligibility on valid indicators of student performance.* Several states have incorporated standardized tests such as the SAT into eligibility criteria, often as a preemptive strike against potential grade inflation. Georgia's experience provides little evidence for concern that merit aid programs will accelerate grade inflation. Because of historic racial disparities in SAT performance, use of such exams would likely reduce the number of African American and Latino students earning the scholarships. Moreover, use of SAT scores would provide a strong incentive for students to devote time to SAT preparation, but little reason to exert more effort on schoolwork. Basing eligibility on class rank rather than grades could reduce concerns about grade inflation while still providing an incentive to focus on schoolwork. Additionally, this approach could reduce the advantage that students from "easier" schools might have. Basing eligibility on a relative rather than absolute benchmark, though, could increase competition among students and reduce student motivation if it is perceived as a moving target.
- *Examine the distribution on both the revenue and expenditure side.* Broad-based merit aid programs, by their very nature, largely benefit middle and upper income families because students from these families are more likely to attend college and to earn the grades necessary for the scholarship. Adding means-testing to the eligibility criteria would focus the benefits on lower income families but would eliminate the incentive effect for students from higher income families. Tiered benefits requiring demonstration of both need and merit could provide a compromise approach. Such a system

could, for example, provide some funding to all students based on merit but larger benefits to students with demonstrated need. Depending on the eligibility criteria and benefit levels, such an approach would likely limit state expenditures. On the revenue side, the use of a state lottery as a funding mechanism clearly exacerbates the potential regressive impact of merit aid programs. Rubenstein and Scafidi (2002) estimate that in Georgia, an increase in the state income tax from 3 percent to 3.385 percent would have fully funded both HOPE and the pre-kindergarten program, with substantially less regressivity than lottery funding.

- *Focus on the transition from high school to college.* If merit-aid programs are to realize long-term benefits for students and for the state, it is not enough for students just to earn the scholarship initially—they must also maintain the scholarship while in college. But many students struggle with the transition to college and lose their scholarships. Higher education systems should increase efforts to identify students most at risk of losing their scholarships and provide additional support, particularly during freshman year. Since college is expected to be more academically rigorous than high school, states could also consider having different eligibility criteria in high school than in college (for example, requiring a 3.25 GPA in high school but a 3.0 in college). If the majority of students lose their scholarships, then the expenditures used to provide one year of scholarships for these students may produce very few benefits relative to the substantial costs.

Future Research

As the oldest and largest broad-based merit scholarship program in the country, the HOPE Scholarship program provides the best opportunity for examining the intended and unintended consequences of such programs. While evidence has begun to accumulate about a number of program effects, important questions remain to be studied. For example, little is known about the students who are most at risk of losing the scholarship. If the

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state hopes to target interventions or support to students who are most likely to lose the scholarship, it is important to identify those students early in their college careers. It is possible, as well, that the risk of losing the scholarship is related not only to the students themselves but also to the high school they attended. Anecdotal evidence suggests that grading standards vary considerably across schools and that students from schools with lower standards have more difficulty retaining their scholarships. Additionally, students from schools with fewer resources may be more ill-prepared for the academic demands of college than those from wealthier schools and school districts.

Relatively little is known about potential unintended consequences of HOPE on the courses recipients choose to take in college. While the research described above suggests that HOPE recipients earn slightly more credits than similar non-recipients, HOPE could also affect student's choice of courses. In particular, concerns about meeting the eligibility requirements could lead students to take courses they perceive as being less demanding. One study, which examined only the Georgia Institute of Technology (Georgia Tech), found that, controlling for student characteristics, students in the sciences, computing, and engineering were significantly more likely than students in other majors to lose their scholarships (Dee and Jackson, 1999). Little is known, though, about the extent to which HOPE might induce students to move out of the sciences and reduce the supply of graduates trained in these disciplines.

Most of the available research on HOPE's effects in college suffers from a lack of data on students' family income. Therefore, it is difficult to assess whether HOPE's effects are caused by the merit-based eligibility requirement or simply by the receipt of financial aid. In other words, it is unclear whether non-merit scholarships would have the same effect on college students as the merit-based HOPE Scholarships. Better data on other forms of financial aid that students receive, and on family socioeconomic status, would help researchers to assess whether

the unique merit-based eligibility requirement is critical to the program's success.

Before embarking on an ambitious program of merit-based financial aid, policymakers must be clear about the goals they are trying to achieve and the priorities among competing goals. The available evidence from Georgia suggests that, not surprisingly, merit aid is far from a cure-all to fix a state's secondary or higher education system. With proper attention to the potential costs and benefits, though, merit aid programs can provide an important complement to other education reform efforts.

Endnotes

1. This policy brief focuses on the HOPE Scholarship program rather than the HOPE Grant.
2. While grade inflation has been a long-standing concern nationwide, this study does not examine whether grade inflation was actually occurring in the years before the HOPE program started.
3. The College Board reports an average SAT score by self-reported GPA and the number of students falling into each grade classification. Henry and Rubenstein (2002) created a weighted average, weighting by the number of students falling into each category.
4. *Selective public colleges* consist of the state's public research universities, while the *selective private institutions* are Emory University and Agnes Scott College. All others are categorized as *non-selective*.

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5. Additional analyses examine changes in state appropriations to selective and non-selective colleges pre- and post-HOPE. They show a large increase in state appropriations per-pupil to selective institutions, but only a small increase for non-selective colleges.

6. Dynarski (2003) examines merit aid programs in other states and finds that, unlike HOPE, most have reduced racial disparities in college-going rates. She attributes Georgia's outlier status to the Pell carve-out policy, which has since been eliminated.

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