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Summary Points

- Students who received merit-aid ACS funding while already enrolled in college earned lower GPAs and accumulated fewer credits compared to non-recipients.
- ACS Current Achiever recipients, on average, were over 40 percentage points less likely to graduate in four, five, or six years relative to their peers who did not receive the scholarship.
- Sophomore ACS recipients were 53-62 percentage points less likely to graduate in four, five, or six years relative to non-ACS recipient students in the same cohort.
- Senior ACS recipients were 54 percentage points more likely to graduate within six years than individuals who did not receive funding.

Does The Timing of Money Matter? A Case Study of the Arkansas Academic Challenge Scholarship

In 2008, legislation passed to dramatically increase a small merit-aid program—the Arkansas Academic Challenge Scholarship (ACS) using newly created funds from the Arkansas Lottery. The expansion of this program created three unique groups of students eligible for funding: Prior Recipients, Traditional Recipients, and Current Achievers. Recent research from the Department of Education Reform at the University of Arkansas investigates how the scholarship influenced student outcomes for Current Achievers, who were already enrolled in college at the time the money was distributed. The study also investigates whether GPA, credit-accumulation, and graduation rates vary depending on which year of college students were in when they received funding.

Introduction

While forty-five percent of Americans hold a post-secondary degree, only 22.6 percent of adults in Arkansas share this achievement (U.S. Census Bureau, 2019). To mitigate this attainment gap, policymakers have pushed to increase the number of post-secondary credentials within the state (Arkansas Department of Education, 2015). One strategy commonly implemented by states to increase college enrollment and degree attainment is the use of state-financed merit aid (Dynarski & Scott-Clayton, 2013).

Arkansas has its own merit-aid program, the Arkansas Academic Challenge Scholarship (ACS). While a version of

the ACS dates back to the 1990s, legislation passed in 2008 dramatically expanded the program by tying funding to the Arkansas Scholarship Lottery. Students received the first round of lottery-funded ACS scholarships in the fall of 2010.

Expansion of the Academic Challenge Scholarship program created three categories of students eligible for funding: Prior Recipients, Traditional Recipients, and Current Achievers. Prior Recipients are individuals who received the original ACS prior to its expansion in the fall of 2010 and remained eligible for the revised form of the program post-expansion. First-time freshmen who entered college after the program's expansion in the fall of 2010 or later are considered Traditional Recipients. The last group, Current Achievers, are students who became eligible for the scholarship while already enrolled at a college or university.

While prior merit-aid scholarship research has largely focused on recent high school graduates (Bruce & Carruthers, 2014; Cornwell et al., 2006; Dynarski, 2003, 2008; Goodman, 2008;

Kane, 2003; Scott-Clayton, 2015), this study adds to the literature on the effects of merit-aid programs by focusing on post-secondary outcomes for Current Achievers who received the ACS in their sophomore, junior, or senior year of college.

While there is reason to expect positive outcomes for all merit-aid recipients, currently enrolled post-secondary students may respond differently to financial incentives compared to Traditional Recipients. Moreover, receiving funding at different points in an individual's post-secondary trajectory may impact his/her progression through college and entry into the workforce. Therefore, studying the influence of merit-aid on Current Achievers provides an opportunity to deepen our understanding of the potential benefits and drawbacks of merit-aid as a policy lever.

A recent study from the Department of Education Reform at the University of Arkansas investigates outcomes for this unique group of merit-aid recipients, studying their post-secondary achievement and attainment at one large university in the state.

New Merit-Aid Legislation in Arkansas

The question of merit-aid timing for Current Achievers is poignant right now as Governor Asa Hutchinson and other state representatives [introduce legislation to expand the Academic Challenge Scholarship again](#). The new Academic Challenge Plus Scholarship would appropriate surplus funding from the Arkansas Lottery to provide up to \$5,000 per year of funding for ACS recipients who also demonstrate financial need. This money provides “last dollar” funding, which stacks the Challenge Plus funding on top of other existing scholarships, including the regular Academic Challenge Scholarship.

The proposed Plus Scholarship is a byproduct of legislation enacted in 2015, which changed the Academic Challenge Scholarship from one which paid equal installments each year to a

backloaded payout which provides increasing payments each year as a student progresses through their post-secondary education.

This change was designed to incentivize students to complete their post-secondary education and to protect the lottery fund from being depleted. Now, six years later, the fund has enough surplus that a portion of the money can be allocated to students with greater financial need in addition to providing the existing ACS. Critics of the 2015 ACS changes should be pleased with this change, as their original criticisms of the backloaded payout structure were driven by claims that it would hurt poor and minority students.

With a possible ACS expansion occurring a second time, it is important to look back on the impact the original expansion had on student post-secondary outcomes. Kopotic and colleagues (2019) found that entering freshmen who received the ACS post-expansion in 2010 fared no better, but no worse, than their non-scholarship recipient peers. Moreover, their study demonstrated that the change in the payout structure from equal installments to backloaded payouts did not influence student achievement or attainment in any measurable ways.

What has not been studied up to this point, is whether the timing of receiving merit-aid influences student outcomes. Given that the ACS may expand again, and merit-aid may increase for needy students who are already enrolled in university, it is important for policymakers to understand the potential benefits, or drawbacks, to such approaches.

The Impact of the Academic Challenge Scholarship Program on Current Achievers

Academic Challenge Scholarship recipients who received merit-aid during their sophomore, junior, and senior years of college at one large Arkansas university generally experienced negative impacts on both their achievement and attainment (Table 1). ACS recipients scored, on average, 0.12 GPA points lower and accumulated about 8 fewer credits one year after receiving the funding, compared to their non-recipient counterparts. Similarly, after two years of receiving the scholarship, recipients had accumulated approxi-

mately 18 fewer credits than their non-ACS peers. ACS recipients also experienced negative impacts on final observed GPA, on average earning about 0.30 GPA points lower relative to non-recipients. However, none of these results are statistically distinguishable from zero.

On the other hand, point estimates for end-of-college outcomes are large and statistically significant. ACS recipients are significantly less likely to graduate within four, five, or six years of matriculation. While the graduation estimates are particularly large—suggesting ACS recipients are 43 percentage points less likely to graduate within four years—they do align with the simple graphical analysis presented in Figure 2. Recipients do not catch up by years five or six and are about 54 and 46 percentage points less likely to graduate in 5 or 6 years relative to their peers, respectively.

Examining the Impact of Merit-Aid Timing

When evaluating the impact of the scholarship on cohort years separately, the study finds significant heterogeneity in the estimate effect of the ACS on post-secondary outcomes. As presented in Table 1, sophomore recipients earn lower GPAs and accumulate a staggering 18 fewer credits within the first year of receiving their scholarship relative to their non-recipient sophomore peers. This phenomena increases, with the sophomore cohort accumulating almost 24 fewer credits two years after receiving funding, and earning GPAs, on average, which are almost 0.75 GPA points lower than their peers. Most alarmingly, students who received funding in their sophomore year of college were between 52 and 62 percentage points less likely to graduate college within four, five, or six years of matriculation compared to students who did not receive the ACS in their sophomore year.

Table 1: Estimated ACS Effects on Student Post-Secondary Outcomes, Separated by Cohort

	Pooled Cohort Analysis	Senior Cohort	Junior Cohort	Sophomore Cohort
GPA (1 Year Later)	-0.12 (0.16)	0.13 (0.23)	0.10 (0.13)	-0.40 (0.31)
Yr. 1 Credit Accumulation	-7.92 (6.06)	-1.92 (11.13)	2.85 (5.86)	-17.68 (11.78)
Yr. 2 Credit Accumulation	-17.61 (12.17)	n/a n/a	2.06 (12.11)	-23.25 (18.88)
Final Observed GPA	-0.29 (0.20)	-0.06 (0.17)	0.08 (0.14)	-0.74 (0.57)
Probability of Graduating				
Within 4 Years	-0.43*** (0.12)	0.27 (0.12)	-0.21 (0.34)	-0.53*** (0.11)
Within 5 Years	-0.54*** (0.07)	0.22 (0.61)	-0.28 (0.36)	-0.62*** (0.03)
Within 6 Years	-0.46*** (0.12)	0.54*** (0.14)	-0.02 (0.39)	-0.60*** (0.04)
Controls	X	X	X	X
Observations	383	58	124	198
Clusters (College Major)	77	34	53	62

In comparison, students who received funding in their junior year appear to have few significant changes in their GPA, credit accumulation after one or two years, and experienced no statistically significant change in their likelihood of graduating within four, five, or six years. Seniors who received the ACS in their final year of university experienced small declines in their credit accumulation and GPA, but are 54 percentage points more likely to graduate within six years relative to their peers who didn't receive the scholarship.

Conclusion

Results indicate that currently enrolled university students who received the ACS had lower cumulative GPAs and accumulated fewer credits relative to their peers. In addition, ACS recipients were significantly less likely to graduate within four, five, or six years. Taken along with the negative—but statistically insignificant—findings on short-run outcomes, these findings may suggest that ACS recipients were more likely to delay graduation than students who did not receive funding. It also implies that scholarship recipients near the eligibility threshold were less likely to attain a degree compared to their peers.

To investigate these results further and to better understand the influence that the timing of merit-aid receipt may have on post-secondary outcomes, the study conducts a secondary analysis separating effects out by cohort. Findings indicate that the negative results from the main analysis are primarily driven by the younger cohort, who began receiving funding during their sophomore year of enrollment. However, this analysis also reveals that seniors who do not graduate on time are 54 percentage points more likely to graduate within 6 years of matriculation when they receive the scholarship.

Policy Implications

These results highlight the fact that the timing of receiving money may heavily influence student behavior and outcomes. Students who receive funding

after their first year of college, but who can still dramatically alter their trajectory, may engage in non-productive decision-making. Moreover, these younger individuals appear to change their behavior immediately after receiving funding. Sophomores who received the ACS accumulated approximately 18 fewer credits within the first year after receiving the scholarship. While statistically insignificant, the decrease in credit hour enrollment is in line with the graduation declines uncovered for that same cohort. It is possible these changes reflect a newfound freedom of choice where students acquire the ability to experiment more with coursework or major options. The study does not investigate these questions, however future studies which dig deeper into these student behavior changes would be beneficial in understanding what motivates these negative results.

On the other hand, receiving the ACS appears to generate positive outcomes for older individuals in the dataset. While seniors who receive the funding during their fourth year of enrollment do not graduate at higher rates that same year, or the subsequent year, they are significantly more likely to graduate within six years. It is possible that individuals who were unlikely to complete their degree without the additional funding that the ACS provides drive this positive finding. For example, a student who is lacking the credit hours required to graduate, but who may have exhausted other financial options, could benefit significantly from the added financial security that the scholarship provides late in their college trajectory. A follow up analysis investigating the characteristics of seniors who do not graduate within 4 or 5 years, but subsequently earn a degree in their sixth year, would help uncover some of the driving factors influencing this result.

While these findings differ from many earlier analyses of state-financed merit-aid programs, there are understandable reasons for these divergent results. First, this study examines a substantively different student population compared to prior studies.

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This research is focused on students who were currently enrolled in college when they became eligible for the ACS (as opposed to entering freshmen) meeting relatively weak academic credential requirements (enrolling for 15 hours a semester and earning a cumulative GPA of at least 2.5 points). Therefore, it should not be unexpected to find that these different student populations would have different experiences. Second, the cohort analysis uncovers the potential influence that the timing of receiving money has on student behavior, which has not been previously studied in merit aid literature.

As Governor Hutchinson and state lawmakers prepare to push legislation for the new Academic Challenge Plus Scholarship, it might be wise to consider the timing and the targeting of those funds. Certainly needs-based students will benefit immensely from the alleviated financial burden provided by the Challenge Plus scholarship, however, this research indicates the timing of receiving that money may matter significantly in a student's postsecondary trajectory.

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