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The effects of merit-based financial aid on drinking in college

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ABSTRACT

We study the effect of state-level merit aid programs (such as Georgia's HOPE scholarship) on alcohol consumption among college students. Such programs have the potential to affect drinking through a combination of channels – such as raising students' disposable income and increasing the incentive to maintain a high GPA – that could theoretically raise or lower alcohol use. We find that the presence of a merit-aid program in one's state generally leads to an overall increase in (heavy) drinking. This effect is concentrated among men, students with lower parental education, older students, and students with high college GPA's. Our findings are robust to several alternative empirical specifications including event-study analyses by year of program adoption. Furthermore, no difference in high-school drinking is observed for students attending college in states with merit-aid programs.

1. Introduction

Heavy drinking among U.S. college students remains widespread even after several decades of efforts aimed at curbing young people's alcohol use (Hingson, 2010). Researchers have made significant progress toward understanding how public policies designed to discourage (risky) alcohol use shape youth drinking patterns (see, e.g., Carpenter et al., 2007), but other policies that indirectly affect youths' drinking may not be as well understood.[2] Perhaps surprisingly, few studies have examined how student financial aid affects drinking behavior among college students.[3] Though alcohol appears to be a normal good in the general population (Ruhm and Black, 2002) and among young adults (Nelson, 2008), little is known about college students in particular. Government and institutional financial aid programs are not only an important determinant of student disposable income but may create other incentives that influence alcohol use (by affecting time allocation, for example). Because these effects are subtle, financial aid programs may affect college drinking in ways that are currently unknown to policymakers.

This paper examines how one type of financial aid policy, state-level "merit aid" programs, affects alcohol use among college students. We believe we are the first to examine the effect of these policies – which began being implemented in the early 1990s and now disburse billions in aid to students every year – on any health behavior or outcome.[4] A large literature documents the rise of broad-based merit aid programs in the U.S. and their effects

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[2] Those policies that explicitly address drinking include the minimum legal drinking age, policies affecting driving under the influence, and alcohol taxes. In addition, a budding literature on how peers affect substance use (including drinking) has made strides toward understanding that dimension of youth risky behavior (see, e.g., Kremer and Levy, 2008 and Eisenberg et al., 2014).

[3] Recent studies that examine the relationship between income and drinking among teenagers include Adams et al. (2012), who find that higher minimum wages are associated with an increase in alcohol-related traffic fatalities among teens. Markowitz and Tauras (2009) estimate a substantial effect of adolescent allowances from parents on drinking participation – a $1000 annual increase in allowance is associated with a 2.2–7.1 percentage point increase in the probability of drinking. Grossman and Markowitz (2001) is one of the only studies to estimate an income elasticity (albeit with state-level income per capita rather than individual income measures) of alcohol use (number of drinks) for college students – they find that this elasticity is 0.63. In addition, Delaney et al. (2008) use cross-sectional Irish data to show that college students' disposable income is positively related to alcohol expenditure but not to drinking participation or degree of excessive drinking.

[4] For a comparison of all merit-based and need-based state-level financial aid programs, see Baum et al. (2012).

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on human-capital accumulation.[5] The most prominent example of these programs is the Georgia HOPE scholarship, initiated in 1993, which provides a full tuition/fee waiver at state institutions to Georgia students who achieve a 3.0 GPA in high school. Since that time, many states have modeled their own programs after the HOPE scholarship to varying degrees.[6] There are several hallmarks of merit-aid programs. First, they only provide aid to students who attend in-state institutions. Second, scholarships are awarded for "merit" – students achieve eligibility based on their high-school GPA and sometimes their SAT/ACT score or class rank. Third, in order to retain a merit-aid scholarship during college, students must maintain a minimum GPA (typically between 2.75 and 3.0; see Sjoquist and Winters, 2014). Lastly, there is generally no means test for eligibility and award amounts do not differ by family income or wealth.[7] We review basic features of merit-aid programs and their growth as a fraction of college financial aid in Appendix A.

We exploit the rollout of these programs by state and over time to isolate their effect on college alcohol use.[8] In doing so, we extend the literature on how merit aid affects student behavior while in college. Cornwell et al. (2005) find that students decrease course enrollments and increase withdrawals in response to HOPE, perhaps to keep their GPA above the scholarship renewal threshold. Sjoquist and Winters (2014) estimate that merit-aid scholarships reduce the number of college students in STEM majors, likely due to their higher degree of difficulty (Dee and Jackson, 1999). Cornwell and Mustard (2007) find that the advent of HOPE led to an increase in car sales in wealthier Georgia counties, presumably because the scholarship is simply a rent payment to families who were planning to send children to college in the first place. Indeed, income effects associated with merit-aid programs are expected to be large for many families since the vast majority of those students who qualify very likely would have gone to college even in the absence of the program (Cornwell et al., 2006).

Student disposable income might increase as a result of a merit-aid program if parents and children share the financial gain associated with not having to pay tuition. Other things equal, this should lead to an increase in drinking if alcohol is a normal good among college students. However, the preceding paragraph makes it clear that merit-aid programs have the potential to affect drinking through channels other than a simple income effect: for example, since these programs increase the incentive to maintain a GPA above the minimum renewal point in one's state, merit aid could *discourage* drinking (particularly for those individuals who are near or expect to be near the GPA cutoff). Indeed, recent research (e.g., Williams et al., 2003; Carrell et al., 2011; Lindo et al., 2012) suggests that alcohol use has a negative causal effect on academic performance. If individuals recognize the link between drinking and grades, they may choose to curb their alcohol use in order to keep their merit scholarship.

Another pathway by which merit aid might affect college alcohol use is through changes in the allocation of time. Previous research suggests these programs affect choice of major, which could in turn affect time spent studying. It is conceivable that these programs also affect decisions about how much to work for pay or engage in various extracurricular activities, any of which could in turn influence drinking behavior. Lastly, the added stress associated with trying to maintain their scholarship could cause some students to drink more as a way of self-medicating (see, e.g., Economos et al., 2008).

A disadvantage of our study, due to limitations on the variables available in the data, is that we cannot pinpoint the exact mechanism by which merit aid affects alcohol consumption. However, we believe this is offset by several advantages. Our data for this project, the College Alcohol Study (CAS), was designed to capture nationally representative detailed data on the drinking habits of college students. Furthermore, the 1990s saw several states adopt large-scale merit-aid programs at various points. Because CAS data was collected in 1993, 1997, 1999, and 2001, we are able to observe drinking in non-merit and merit states both before and after the implementation of several of these policies. Thus, we believe our study is ideal for measuring the overall effect on drinking of merit-aid scholarship programs.

We consistently find that large-scale merit aid programs led to an increase in drinking among college students living in states that adopt programs. Our preferred specification indicates that the arrival of a merit-aid program leads to an 18% increase in the number of days a male student had 5 or more drinks in a row in the past 2 weeks. Effects for female students overall are generally smaller or even negative (sex differences in our results is something we discuss in detail in Section 4). We also find that the effects are strongest for students with lower parental education, older students, and students with high college grades (recall that a sufficiently high GPA is necessary to maintain a merit scholarship).

Our identification strategy rests on the assumption that unobservable trends across merit-aid states and non-merit states are the same – if this is the case, the differential drinking trends in merit-aid states are due to the programs themselves. To guard against the possibility that unseen factors are responsible for the results, we examine the robustness of our results with respect to the set of control variables used (including state and region-specific trends) as well as the sample of states used in estimation (e.g., only southern states or only states that eventually adopt a merit-aid program). In addition, we explicitly analyze how drinking trends in merit-aid states compare to other states in an event-study framework. Our main results are robust to all of these specification changes.

Lastly, we are mindful of the fact that since we only observe individuals' states of residence while they are in college, there is a possibility that drinking at institutions in merit-aid states increases simply because the composition of enrollees changes relative to institutions in non-merit states (if this were the case, the adoption of a merit-aid program might increase alcohol use at certain institutions but would not have caused any individual student to change her drinking habits).[9] We can examine this issue indirectly because we have data on college students' (retrospective) drinking behavior in high school. We find that students who are eligible (based on their age) and live in merit-aid states do not report relatively higher levels of high-school alcohol use (even though they do, of course, report more drinking as college students). This is evidence that the positive drinking effects we find are not simply due to institutions in merit-aid states admitting a greater share of heavier-drinking students after the program is adopted.

[5] See Hu et al. (2012) for a review of the literature on how merit-aid programs affect college enrollment and other outcomes.

[6] For a description of these programs, which vary in their generosity, see Dynarski (2004), Sjoquist and Winters (2012, 2014).

[7] The HOPE program contained an income cap on eligibility for its first 2 years of existence, but this feature was eliminated in 1995 (Dynarski, 2004).

[8] Alcohol abuse is among the largest public health concerns for individuals in the college demographic. See http://pubs.niaaa.nih.gov/publications/CollegeFactSheet/CollegeFact.htm (last accessed: July 28, 2014).

[9] Our sample consists of students at four-year institutions, which are generally likely to become more competitive, if anything, after the adoption of merit aid since some students who would have gone out-of-state for college now remain in-state (Cornwell et al., 2006 finds this is true in Georgia). Since higher-achieving high-school students drink less than their peers on average (e.g. Balsa et al., 2011), this could bias our (positive) estimates toward zero.