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The Economics of Student Aid

Susan M. Dynarski*

My research focuses on the incentives and distributional effects created by government policy toward education. In a series of papers, I have examined the various methods that governments use to subsidize post-secondary education and how the choice of instrument mediates the final impact of the subsidy. I am particularly interested in how different instruments intensify or ameliorate racial, gender, and income inequality in educational and labor market outcomes. My goal is the establishment of a body of well-identified empirical research that informs us about these questions.

A wide array of policy instruments is now used to subsidize college attendance, including need-based grants, subsidized loans, merit scholarships, low public tuition, and tax incentives. Every state now has a tax-free college savings plan, or 529 savings plan. Many states also provide merit aid to a large proportion of their college students; these programs are distinct from the traditional merit scholarships (such as the National Merit Program or New York Regents Scholarships) in that they are aimed at students with moderate academic skills.

These innovations have outpaced our understanding of how different methods for subsidizing education affect schooling decisions, an evidentiary gap that my research agenda seeks to close. Theory and common sense suggest that different forms of subsidy will have different behav-

ioral and distributional effects.

For example, the paperwork requirements of the federal, need-based aid programs are quite high, comparable to those of a complicated income tax return.¹ If low-income families find such forms particularly difficult, then need-based aid—which requires gathering extensive information about income and expenses—may have a smaller effect on this population than less-targeted forms of subsidy with fewer application requirements and lower transaction costs.

College Entry and Student Aid

In “Does Aid Matter? Measuring the Effect of Student Aid,”² I establish that a transparent grant program with low transaction costs had a substantial impact on college entry. Existing, well-identified studies had found no effect of grant aid on schooling behavior, so this paper made a substantial contribution to the field. From 1965 to 1982, the Social Security Administration paid for millions of students to go to college. Under this program, the 18- to 22-year-old children of deceased, disabled, or retired Social Security beneficiaries received monthly payments while enrolled full-time in college. The average annual payment in 1980 to the child of a deceased parent was \$6,700. At the program’s peak, 12 percent of full-time college students aged 18 to 21 were receiving Social Security student benefits.

In 1981, Congress voted to eliminate the program. Except for the introduction of the Pell Grant program in the early 1970s, and the various GI Bills, this is the largest and sharpest change in grant

aid for college that has ever occurred in the United States. The program’s demise provides an opportunity to measure the incentive effects of financial aid. Using difference-in-differences methodology, and with the death of a parent during an individual’s childhood as a proxy for benefit eligibility, I find that the elimination of the Social Security student benefit program reduced college attendance probabilities among this group by more than a third. These estimates suggest that an offer of \$1,000 in grant aid will increase the probability of attending college by about 3.6 percentage points.

I have also examined the effect of recent innovations in state post-secondary policy on schooling decisions. Since the early 1990s, more than a dozen states have established broad-based merit aid programs. The typical program waives tuition and fees at public colleges and universities in one’s home state. Unlike traditional, elite merit programs, such as the National Merit Scholarship, the new merit aid requires relatively modest academic credentials and annually funds hundreds of thousands of students. For example, Georgia’s merit scholarship requires a high school GPA of 3.0; renewal requires maintaining a 3.0 in college. In “Hope for Whom?”³ I showed that Georgia’s HOPE Scholarship program had a substantial impact on college attendance. The effects were concentrated among whites, with little to no effect on the schooling of Blacks. The program thereby exacerbated the large racial gap in college attendance in Georgia.

I further explore racial heterogeneity in the effect of aid in “The New Merit Aid”⁴, in which I examine schol-

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arship programs in a dozen states. I estimate they have positive effects on college attendance, comparable in magnitude to those found in Georgia. All of the programs also shifted students from two-year colleges toward four-year colleges. However, the null effect of the Georgia program on Black attendance appears to be unique: other state's merit scholarship programs *reduce* racial gaps by disproportionately increasing college attendance among Blacks. I attribute the unusual effect of the Georgia program to a provision that reduced HOPE Scholarships for Pell Grant recipients, who are disproportionately Black.

College Completion and Student Aid

The research just discussed established a link between college entry and college costs. A valid concern, however, is that students induced into college by grant aid may be unable to handle the academic rigors of college. Indeed, many young people enter college but drop out before completing a degree. In the 2000 Census, just 57 percent of those aged 22 to 34 with any college experience have completed an associate's or bachelor's degree. Thirteen percent have not completed even a year.

These facts were the motivation for my examination of the effect of student aid on college completion in "Building the Stock of College-Educated Labor"⁵. In this paper, I find a large and significant impact of college costs on degree receipt. Simple and generous scholarship programs introduced in Arkansas and Georgia in the early 1990s increase the share of young people with a college degree by three percentage points, from a base of 27 percent—a substantial effect. The results suggest that those induced into college by aid graduate at least at the same rate as other students.

A surprising finding is that almost all of the programs' effects are concentrated among women. More girls than boys meet the eligibility requirements for merit scholarships, with 49 percent of female college freshmen and only 36 percent of males having a high school GPA of

at least 3.0. Previous research has shown that in course grades and standardized tests, girls outperform boys in high school and are substantially more likely to go on to college⁶. I am now using multiple data sources to trace the development of these gender gaps in college and high school to their origins in elementary school and preschool.

Tax Incentives for College Saving

Over the past decade, states and federal governments have established new tax-advantaged vehicles for college savings. The federal Coverdell accounts and state 529 accounts resemble Roth IRAs: aftertax dollars are deposited into special accounts where they can grow tax-free and, if used for qualified educational expenses, be withdrawn tax-free. In about half the states, deposits to 529 accounts are exempt from state taxation, further increasing the tax advantages.

In "Who Benefits from the Education Saving Incentives? Income, Educational Expectations, and the Value of the 529 and Coverdell"⁷ I calculate the incentives created by these new savings vehicles. I find that the advantages of the 529 and Coverdell rise sharply with income. Those with the highest marginal tax rates benefit the most from sheltering income, gaining most in both absolute and relative terms. Further, the accounts are risky for families for whom the college attendance of children is uncertain, since account holders are penalized if the accounts are not used for schooling. I calculate the minimum probabilities of college attendance that are required for the 529 and Coverdell to have expected returns at least as high as alternative saving vehicles and find that for households with incomes below \$57,000 these breakeven probabilities are higher than the observed rates at which their children go to college.

A final reason that the education savings accounts disproportionately benefit high-income families is their poor coordination with the federal financial aid system. In "Tax Policy and Education Policy: Collision or Coordination? A Case Study of the 529 and Coverdell

Saving Incentives,"⁸ I focus on the perverse incentives that can emerge when different policies to encourage human capital investments inadvertently collide. I find that the joint treatment by the income tax code and financial aid system of college savings creates tax rates that exceed 100 percent for those families on the margin of receiving additional financial aid. Since even families with incomes above \$100,000 receive need-based aid, the impact of these very high taxes is quite broad. My simulations showed that \$1,000 of pretax income placed in a Coverdell for a newborn and left to accumulate until college could face income and aid taxes that consume all principal, all earnings, and an additional several hundred dollars. Happily, this particular collision of aid and tax policy was corrected soon after the research was published.

Complexity as a Barrier to the Effectiveness of Aid Policy

As evidence concerning the effect of subsidies on schooling choices has accumulated, it has become clear that not all aid programs are effective. In particular, the need-based programs that are the foundation of federal aid policy (including the Pell Grant and Stafford Loan) have not been shown to be effective in getting more people into college.⁹

A possible culprit is complexity and uncertainty in the federal aid programs. For the typical household, the aid application (the Free Application for Federal Student Aid, or FAFSA) is longer and more complicated than the federal tax return. The aid process is also highly uncertain, with definitive information about freshman-year aid not revealed until the spring of the senior year in high school. With Judith Scott-Clayton¹⁰ I used the tools of optimal tax theory and behavioral economics to shed light on how complexity in a program can create unintended distributional and behavioral consequences.

Complexity in the need-based aid system arises from attempts to precisely measure ability to pay for college. As has been highlighted in the tax policy literature,¹¹ gathering detailed information

about income is costly to both the taxpayer and the government, although policymakers usually ignore these costs.

For aid applicants, the costs of complexity include the time and resources required to learn about the aid system and its rules, collect all of the required documents, and fill out the aid application. The time and effort required to complete these steps is likely higher for those low-income students who are the target of the federal aid programs. Many low-income families cannot benefit from learning-by-doing, since the parents are unlikely to have gone to college and applied for aid themselves. They have fewer guidance counselors to guide them through the process. They are less likely to have Internet access at home and more likely to speak English as a second language. Each of these barriers makes the aid process most daunting for its target population.

A valid rejoinder to this line of argument is that the financial returns to a college education dwarf any reasonable estimate of the costs of applying for aid. Thus, if people behave rationally, anyone who is deterred from going to college by compliance costs must have an unusually low expected return to college. By implication, not much is “left on the table” when such students are discouraged from entering college; the loss to social welfare is predicted to be minor if everyone is behaving rationally.

A key insight of behavioral economics is that people systematically do not behave rationally, even in matters where we might most expect calculating rationality. The behavioral literature demonstrates conclusively that even seemingly minor complexities can have profound impacts on behavior. In a series of influential papers,¹² Brigitte Madrian and co-authors have shown that the seemingly minor bureaucratic barriers to 401(k) enrollment have a substantial impact on

savings rates. If minor paperwork burdens discourage working adults from saving, they will plausibly discourage adolescents from investing in their own human capital.

By its nature, college is an investment: upfront sacrifices are required (tuition, forgone earnings, studying) in order to obtain back-loaded benefits (better job, higher earnings, higher social status). Applying for aid is part of the cost of college, requiring a current sacrifice in order to yield a future return. Given that adults are guilty of procrastination and avoidance in quite high-stakes investments, we should not expect any less (or any more) from adolescents making high-stakes decisions about their human capital.

We show that the aid system imposes these potentially large costs in order to measure very small differences in ability to pay. Nearly all of the variation in federal aid is generated by a fraction of 70 data items used in the aid formula. Adjusted gross income, marital status, and family size explain over three-quarters of the variation in Pell Grant awards. Since the IRS 1040EZ already collects most of the key pieces of data that determine aid eligibility, a reasonable option would be to eliminate the aid application completely and establish student aid eligibility based on tax return data.

¹ S. Dynarski and J. Scott-Clayton, “The Cost of Complexity in Federal Student Aid: Lessons from Optimal Tax Theory and Behavioral Economics,” NBER Working Paper No. 12227, May 2006 and National Tax Journal, 59:2 (2006).

² S. Dynarski, “Does Aid Matter? Measuring the Effect of Student Aid on College Attendance and Completion,” NBER Working Paper No. 7422, November 1999, and American Economic Review, 93:1 (2003).

³ S. Dynarski, “Hope for Whom?”

Financial Aid for the Middle Class and Its Impact on College Attendance,” NBER Working Paper No. 7756, June 2000, and National Tax Journal 53:3 (2004).

⁴ S. Dynarski, “The New Merit Aid,” NBER Working Paper No. 9400, December 2002, and published in C. Hoxby, ed., *College Choices: The Economics of Where to Go, When to Go, and How To Pay for It* (2004).

⁵ S. Dynarski, “Building the Stock of College-Educated Labor,” NBER Working Paper No. 11604, September 2005.

⁶ C. Goldin, L. Katz, and I. Kuziemko, “The Homecoming of American College Women: The Reversal of the College Gender Gap,” NBER Working Paper No. 12139, April 2006 and Journal of Economic Perspectives 20:4 (2006).

⁷ S. Dynarski, “Who Benefits from the Education Saving Incentives? Income, Educational Expectations, and the Value of the 529 and Coverdell,” NBER Working Paper No. 10470, May 2004 and National Tax Journal 57:2 (2004).

⁸ S. Dynarski, “Tax Policy and Education Policy: Collision or Coordination? A Case Study of the 529 and Coverdell Saving Incentives,” NBER Working Paper No. 10357, March 2004, and Tax Policy and the Economy 18 (2004).

⁹ T. Kane, “Rising Public College Tuition and College Entry: How Well Do Public Subsidies Promote Access to College,” NBER Working Paper No. 5164, July 1995.

¹⁰ *Ibid.*

¹¹ L. Kaplow, “How Tax Complexity and Enforcement Affect the Equity and Efficiency of The Income Tax,” NBER Working Paper No. 5391, May 1996, and National Tax Journal, 49, (1996).

¹² J. Beshars, J. Choi, D. Laibson, and B. Madrian, “Simplification and Saving,” NBER Working Paper No. 12659, October 2006.