
Return on What Investment?

The Behavioral Economics of Student Financial Aid

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Each year, the federal government offers billions of dollars in need-based grant aid and loan subsidies to low-income college students. Concern is growing, however, around several system-wide problems that persist despite these federal investments: that many low-income students either 1) fail to take advantage of available aid; 2) are accepted to college but do not enroll; or 3) enroll but end up dropping out before graduating. While each of these decisions is informed by many factors, economists have identified program complexity and student behavioral bias as key variables—in other words, real humans do not always make the rational financial calculations policymakers expect of them when designing aid programs. This article reviews existing research on behavioral economics and student financial aid, examines access and completion barriers through a behavioral lens, and evaluates policy vehicles aimed to reverse students' behavioral biases.

INTRODUCTION

An established body of research links student financial aid not only to college enrollment (Dynarski & Scott-Clayton 2013; Kane 2003), but also to college persistence and completion (Alon 2011; Castleman & Long 2016; Deming & Dynarski 2009), particularly for low-income students. Evidence likewise suggests that receipt of financial aid leads to positive post-college outcomes such as homeownership, better credit, and improved financial health (Scott-Clayton & Zafar 2016). Still, approximately 40 percent of high-school graduates do not apply for financial aid (DeBaun 2018a), 10 to 40 percent of students accepted to college do not enroll (Castleman, Page, & Snowdon 2013), and 25 to 30 percent of those who do enroll end up dropping out (Castleman 2017).

While education policy experts have written volumes on the many factors that contribute to these gaps, economists tend to identify program complexity and student behavioral bias as important pieces of the problem. Behavioral economics explores how psychological, emotional, and cognitive factors influence economic decisions and accounts for the fact that consumers do not always have perfect information and do not always behave rationally. This reality has important consequences for the federal student aid system which, especially in recent years, has gained a reputation for being overly complex.

The following sections describe the federal student aid landscape, synthesize existing research on behavioral economics and student financial aid, examine access and completion barriers through a behavioral lens, and evaluate policy proposals designed to reduce program complexity and students' behavioral biases.

HIGHER EDUCATION AND STUDENT FINANCIAL AID

Postsecondary education is widely viewed as an engine of economic and social mobility in the United States. On average, full-time workers who hold bachelor's and associate degrees earn approximately 67 and 25 percent more annually than those with only a high school diploma, respectively (Ma, Pender, & Welch 2016). Higher education also leads to substantial external societal benefits, namely "increased tax revenue, improved health and well-being, and decreased expenditures on social programs" (Castleman 2017, 1). While college access has expanded dramatically in the decades since the Higher Education Act (HEA) was passed in 1965, enrollment rates still differ greatly across race, ethnicity, and income levels. In 2015, college enrollment rates among Black and Hispanic high school graduates were 8 and 5 percentage points lower than their white peers, respectively. Furthermore, on average, postsecondary enrollment rates for low-income students were 13 percentage points lower than high-income students with similar high-school math test scores (Ma, Pender & Welch 2016).

The financial aid system was designed to make higher education more accessible to underrepresented and under-resourced groups. Federal financial aid was first guaranteed under the Servicemen's Readjustment Act of 1944, or the GI Bill, which

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established a governmental role of “supporting higher education through students” (Fuller 2014, 50). The HEA, passed in 1965 as one of President Lyndon Johnson’s “Great Society” domestic policy priorities, first authorized substantial direct federal grant and loan programs to benefit all students, with additional support given to disadvantaged students (Hegji 2016). Congress has since reauthorized the HEA seven times and is constantly expanding its reach and scope. Today, the federal government manages the Pell Grant Program, multiple loan options, federal work-study, and a variety of campus-based and institutional aid programs. In 2017-18, students borrowed \$105.5 billion in student loans and Pell Grant expenditures totaled \$28.2 billion. By comparison, in 1997-98, student loan borrowing and Pell Grant spending totaled \$49.3 billion and \$9.7 billion in 2017 dollars, respectively (College Board 2018).

BEHAVIORAL ECONOMICS AND STUDENT FINANCIAL AID

Baum and Schwartz (2013, 1) argue that “the issue is not just whether the money is there, but whether financial aid programs and processes are structured to maximize the impact of the available funds on student enrollment and success.” Furthermore, students who are unable to recognize the benefits of a college education in the first place are unlikely to apply to, enroll in, or complete a postsecondary program, let alone take advantage of financial aid (Avery & Turner 2012; Cunha, Heckman & Navarro 2005). While academics, policymakers, and advocates argue about the rising cost of college and state disinvestment in higher education—central concerns to college affordability and access—economists contend that many of the barriers to postsecondary attainment are in the design of student aid programs.

Student grant and loan programs were designed using classical assumptions about consumer behavior. Within the rational actor framework, students are expected to maximize utility over several options, subject to a budget constraint. For example, the Federal Pell Grant is essentially a voucher that expands a student’s budget constraint, allowing her increased opportunity to enroll or not enroll based on her preferences. How recipients spend Pell Grant dollars is informed by an income and substitution effect. The income effect is the extent to which a recipient spends more on both education and other goods as a result of the grant making her relatively wealthier. The substitution effect, on the other hand, is the extent to which a recipient spends more on education relative to other goods—such as borrowing or hours of labor—as a result of the grant making education comparatively cheaper (Evans & Nguyen 2018).

Decisions about financial aid only lead to an “optimal outcome” under certain conditions, however, including perfect information, unbounded rationality, and proper accounting of intertemporal costs and benefits. Theories developed since the student aid system was created reveal these conditions are actually very difficult to meet. After all, “[i]f students do not know the price of college, if they do not know how much financial aid they will receive, or if they do not know what long-term benefits they can expect to receive from going to college, they will not be able to make optimal decisions” (Baum & Schwartz 2013, 4).

Behavioral economics is built on the notion that “people systematically do not behave rationally, even in matters where we might most expect calculating rationality” (Dynarski & Scott-Clayton 2006, 328). This “bounded rationality” principle, as Herbert Simon (1990) theorized, is the idea that rational decision-making is restricted by humans’ computational limits. The following sections explore the effect of three such limitations on student borrower behavior: available information, time perceptions, and default tendencies.

IMPERFECT INFORMATION AND THE ROLE OF COMPLEXITY

Rational choice economic models rely on perfect information to reach optimal outcomes. The student financial aid process, like many government and private funding mechanisms, is very complicated and leaves students far from having perfect information. Dynarski and Scott-Clayton (2006, 320) put it simply: “potential college students cannot respond to a price subsidy if they do not know it exists.” Information gaps are everywhere in higher education. As public support for higher education decreases and sticker prices increase, the true out-of-pocket cost (or “net price”) of college becomes more difficult for families to understand. Students, particularly those from low-income families, tend to overestimate the cost of college and “are uninformed about sources of potential aid” (Scott-Clayton 2012, 2). Low-income students are also disproportionately affected by imperfect information because their parents are less likely to have gone to college and navigated the aid system themselves. Language barriers, high mobility rates, and lack of internet access also create large compliance costs and information gaps for low-income students (Dynarski & Scott-Clayton 2006).

Decisions to apply to college, apply for financial aid, attend college, and persist year-to-year are each influenced by process complexities. To qualify for federal aid each year, students must fill out the Free Application for Federal Student Aid (FAFSA), a lengthy and dense application that requires them to report detailed information about their parents’ income and assets, government assistance receipts, tax credits, child support, and all other types of income and liabilities (Scott-Clayton 2012). Senator Lamar Alexander, current chairman of the Senate Committee on Health, Education, Labor, and Pensions (HELP), is known for dramatically unrolling the FAFSA “onto the floor like an ancient scroll” (Ross 2015) to emphasize its complexity. For many families, the FAFSA is “longer and more complicated than the federal tax return” (Dynarski & Scott-Clayton 2008, 319). Only about 60 percent of high-school graduates completed the form during the 2018-19 cycle (DeBaun 2018a). Complexity is thought to cause students to procrastinate on aid deadlines and “trigger heuristics and biases that lead people to incorrect decisions, even if they do not procrastinate” (Baum & Schwartz 2013, 11).

FAFSA verification poses further information and complexity barriers that have consequences for low-income students. Each year, the Department of Education (ED) flags millions of completed FAFSA applications for verification, requiring institutions to further validate students’ FAFSA information and award determinations. Most applicants selected for verification are eligible for the Pell Grant (The Institute for

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College Access & Success 2016), as the federal government is especially concerned that Pell dollars, which do not have to be paid back, are correctly awarded to the neediest students. Before receiving any financial aid, these students must obtain IRS tax forms, high-school transcripts, or other specified documentation and submit them to financial aid offices for review. Some students mistake verification requests as ineligibility notices (Smith 2018) or simply fail to take the required additional steps before the semester begins. Students procrastinate these tasks either because the choice to take action seems too difficult or “because the action required to implement the choice is complicated” (Baum & Schwartz 2013, 11). The National College Access Network estimates that one in four low-income students selected for verification never complete the process (DeBaun 2018b).

TIME DISCOUNTING AND LOSS AVERSION

Students are also known to respond irrationally to time and perception constraints. As Kahneman and Tversky (1979) conceived in their “prospect theory,” individuals do not always make optimal decisions. A key component of behavioral economics is that “losses loom larger than gains” —in other words, individuals dislike losses more than they like equivalent gains (Kahneman & Tversky 1979). This theory supports Baum and Schwartz’s (2013, 14) assertion that the “timing with which benefits and costs occur affects [student] decisions.” Students are known to miscalculate the long-run benefits of a college education, which are spread and concentrated differently across an individual’s lifetime (Manski 1993; Long 2004). It is likely that many students also fail to account for the fact that returns to higher education extend beyond the individual to society over time (Hout 2012), and to family members through intergenerational mobility (Venator & Reeves 2015).

Individuals make intertemporal choices by converting future returns into current-value equivalents and choose to make investments if “present discounted” benefits exceed costs. Neoclassical models, which rely on perfect rationality, assume this decision is “pure wealth maximization” and expect consumers to see benefits and costs—both future and present—as dollar amounts along the same utility function. However, humans do not always detect the equivalence of present discounting and future consumption. Behavioral economics adds “time-discounting” to this intertemporal choice matrix, which explains how people weigh present values more heavily than future values (Frederick, Loewenstein, & O’Donoghue 2002). According to a similar theory called “hyperbolic discounting,” individuals discount future returns at very high rates and favor short-run over long-run benefits (Harris & Laibson 2001). These self-control problems disrupt neoclassical assumptions about intertemporal choice (Mullainathan & Thaler 2000), as consumers are known to overestimate present discount rates and, exhibiting present bias, favor current consumption over greater future returns.

Loss aversion and present bias each influence student borrowing behavior. Many students exhibit debt aversion, which, “like the irrational aversion to losses,” causes them to “internalize a nonfinancial cost of debt that results in a psychological debt

burden” (Gandhi 2008, 139). Strictly rational students would not hesitate to take on student loans if returns to their education were expected to exceed loan principal, interest, and opportunity costs. In actuality, of course, such decisions are not so simple—especially for low-income students and those who rely on current income. Research is mixed on whether debt aversion among low-income students is rational. On the one hand, low-income students are less likely to earn degrees and earn less, on average, than their high-income peers, which means “[c]aution about borrowing could be a rational response to a student’s circumstances” (Burdman 2005, 4). However, there is evidence that “aversion to loans may reduce opportunities for a subset of low-income and minority students, the very students who most need financial assistance to attend college” (Burdman 2005, 3). Working students tend to “register greater disutility from losing income than they will feel utility from the distant returns of a college education” (Gandhi 2008, 140). Additionally, the returns to a college education vary greatly by degree type, field of study, institution, program, and uncontrollable life circumstances (Oreopoulos & Petronijevic 2013)—“for some, college will not pay off, and this possibility may weigh heavily in schooling decisions due to loss aversion” (Dynarski & Scott-Clayton 2008, 23).

Students who forego a college education because they do not have a clear picture of its benefits could also be exhibiting signs of the Ellsberg paradox. This principle of decision theory was developed by Daniel Ellsberg (1961) and holds that individuals often make decisions that decrease expected utility because they do not know the probability that alternative choices will pay off. This preference for “known” rather than “unknown” probabilities is called ambiguity aversion (Fox & Tversky 1995) and can bias students away from postsecondary participation.

DEFAULT OPTIONS AND STATUS QUO BIAS

Thaler and Sunstein (2008) explain how individuals tend to default to preset courses of action, even when they could increase utility by choosing a different option. This means that, whether due to fear, apathy, or confusion, many people make decisions based on what seems easiest or requires the least effort. This tendency to opt for the path of least resistance, or the default option, generally applies to large groups and is reinforced if it “comes with some implicit or explicit suggestion that it represents the normal or even the recommended course of action” (Thaler, Sunstein, & Balz 2010, 3).

The default option for affluent students is college attendance—their parents are much more likely to have postsecondary credentials and the schools these students attend typically have strong college preparation infrastructure (Dynarski & Scott-Clayton 2006). Conversely, for low-income students, the default choice is to forego college. Parents and siblings of low-income students are not likely to have attended college and lower-income schools have less robust college preparation supports (Dynarski & Scott-Clayton 2006). This creates a path of most resistance scenario, in which low-income students tend to favor the default option of foregoing further education despite having much to gain from a postsecondary credential.

POLICY PROPOSALS

The higher education policy space is saturated with proposals to address these behavioral problems. Policymakers, analysts, and economists have each offered solutions to complexity, information gaps, time barriers, and default tendencies. These recommendations are especially timely, as the HEA is long overdue for a comprehensive reauthorization. In her written testimony to the Senate HELP Committee, Judith Scott-Clayton (2017, 4-5) said “some (including myself) have proposed eliminating the FAFSA completely and instead determining eligibility automatically, using income and other data from tax forms.” Many groups have recommended a simplified aid eligibility formula (Baum & Scott-Clayton 2013; Bill & Melinda Gates Foundation 2015; Rueben, Gault & Baum 2015). Think tank recommendations and pending legislation also include consolidating grant and loan programs (Chingos 2018), expanding the IRS Data Retrieval Tool (DRT), targeting FAFSA questions based on applicants’ financial characteristics (NASFAA 2015), and simplifying loan repayment options (Cox, Kreisman, & Dynarski 2018).

“Although almost no one opposes simplification in theory,” Scott-Clayton (2012, 17) writes, “simplification in practice can be surprisingly difficult.” Politicians and taxpayers care that federal dollars are awarded to the right students, and some are wary that oversimplifying could compromise the integrity of federal need-based aid programs. Efforts to import more pre-verified income and tax information from existing federal databases—particularly using the DRT—seem promising, though these tools cannot be used by all applicants and are prone to shutting down due to security concerns (Kreighbaum 2017). However, FAFSA simplification remains a core priority for education committee members on both sides of the aisle, who, despite failing to advance a bipartisan HEA reauthorization in the 115th Congress, are likely to revisit the issue more seriously in 2019.

Researchers also recommend that the federal government increase transparency to ensure students have clearer information about net price, quality, and program outcomes (Schneider 2017; Scott-Clayton 2012). The hope is that, by sharing data effectively, students and families will have enough information to make more rational postsecondary choices. Support is growing for proposals like the College Transparency Act of 2017, a bipartisan piece of legislation that would establish a federal student-level data network that could better disaggregate program- and institution-level inputs, outputs, and outcomes for different subsets of students. Proponents argue this system “would reduce institutional reporting burdens, while allowing ED to calculate even more comprehensive and useful metrics” for policymakers, students, and families (Roberson et al. 2017, 3).

It might be, however, that the most effective solution to complexity and information problems is to ensure families have access to comprehensive application assistance and financial counseling. In a randomized study of low-income H&R Block customers, Bettinger et al. (2012) found that simply relaying information to disadvantaged

students about their aid eligibility had no effect on college enrollment. However, college enrollment rates for students whose parents received in-person FAFSA filing assistance were 8 percentage points higher than those in the control group—42 percent versus 34 percent. This suggests that providing information alone is not the solution; rather, disadvantaged students appear to respond most to “individual-specific support and assistance” (Baum & Schwartz 2013, 11).

To address time discounting, experts typically recommend frontloading as much aid as possible. Gandhi (2008, 144-145) argues that myopic loss averse behavior can be mitigated by accelerating loan subsidies “from delivery postgraduation to a lump-sum at the time of enrollment,” effectively transforming them to operate like grants. Experts have also proposed offering a larger one-time Pell Grant to students up front to increase college access, encourage timely enrollment, and mitigate transition anxiety (Stedman 2004; Rotherham 2012). Again, however, it seems communicating with students about the benefits of higher education could be the strongest corrector of time discounting and present bias. Policymakers might consider a systematic way of helping students reach a rational benefit-cost calculation of the returns to higher education.

Ultimately, the most important financial aid policy priority should be to restructure the choice architecture for low-income students. If these students’ default option is to forego college, the student financial aid system is fundamentally useless; federal grant and loan programs were designed to make college accessible for all Americans, especially those from disadvantaged backgrounds. Decision makers should continue to use policy tools to shift these types of default options.

Nudge interventions are still nascent in postsecondary education, though emerging research indicates targeted FAFSA nudges may be a promising tool to improve college enrollment among low-income and first-generation students. Nudge policies are designed to influence behavior “in a predictable way without forbidding any options” or altering economic incentives (Thaler & Sunstein 2008, 6). In a randomized controlled trial experiment, Bird et al. (2017) found that sending “concrete planning prompt” nudges to families, which included instructions about how and when to fill out the FAFSA, increased college enrollment among first-generation college students by 1.7 percent. These interventions tend to be more cost-effective than traditional policy tools such as subsidies and tax incentives (Benartzi et al. 2017).

Baum and Schwartz (2013) hypothesize that making FAFSA completion a condition for high-school graduation could also boost enrollment, a policy that would effectively establish FAFSA completion as a default option. Additionally, early commitment of grant aid to low-income students is thought to adjust their default option to accommodate college. Each such intervention should be examined carefully before implementation, however, as policymakers themselves can be susceptible to their own biases in assuming what is best for a particular population. In the end, behavioral economists argue that these policies ultimately “preserve freedom of choice” while “steer[ing] people in directions that will promote their welfare” (Thaler & Sunstein 2003, 179).

CONCLUSION

Policymakers and economists are both interested in the intricacies of student behavior and how they interfere with rational decision-making. Most higher education leaders agree that if federal funds are available for use, students should be taking advantage of them—especially considering the long-term returns of a college education. In crafting a comprehensive HEA reauthorization, Congress should consider behavioral consequences of policies aimed at students and, more importantly, seek to overturn default options that disincline low-income students from taking up financial aid, enrolling in college, and completing a degree. Behavioral economics should inform further discussions about the role complexity, time biases, loss aversion, and default options play in complicating student decisions about college; behavioral principles can guide stakeholders to more efficient statutory and regulatory solutions.

REFERENCES

- Alon, Sigal. 2011. "Who Benefits Most from Financial Aid? The Heterogeneous Effect of Need-Based Grants on Students' College Persistence." *Social Science Quarterly* 92 (3): 807-829. https://people.socsci.tau.ac.il/mu/salon/files/2011/11/ssq_sep2011_final.pdf.
- Avery, Christopher and Sarah Turner. 2012. "Student Loans: Do College Students Borrow Too Much – Or Not Enough?" *Journal of Economic Perspectives* 26 (1): 165-192. <https://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.26.1.165>.
- Baum, Sandy, and Judith Scott-Clayton. 2013. *Redesigning Pell Grants for the Twenty-First Century*. Washington, DC: Brookings Institution Hamilton Project. http://www.hamiltonproject.org/assets/legacy/files/downloads_and_links/THP_BaumDiscPaper_Final.pdf.
- Baum, Sandy and Saul Schwartz. 2013. *Student Aid, Student Behavior, and Educational Attainment*. Washington, DC: The George Washington University Graduate School of Education and Human Development. https://gsehd.gwu.edu/sites/default/files/documents/PUBLISHED_Baum_Schwartz.pdf.
- Benartzi, Shlomo, John Beshears, Katherine L. Milkman, Cass R. Sunstein, Richard H. Thaler, Maya Shankar, Will Tucker-Ray, William Congdon, and Steven Galing. 2017. "Should Governments Invest More in Nudging?" Harvard Public Law Working Paper No. 17-42, June 8, 2017. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2982109.
- Bettinger, Eric P., Bridget Terry Long, Philip Oreopoulos, and Lisa Sanbonmatsu. 2012. "The Role of Application Assistance and Information in College Decisions: Results from the H&R Block Fafsa Experiment." *The Quarterly Journal of Economics* 127 (3): 1205-1242. <https://academic.oup.com/qje/article/127/3/1205/1921970#84585609>.
- Bill & Melinda Gates Foundation. 2015. *Better for Students: Simplifying the Federal Financial Aid Process*. Seattle, WA: Bill & Melinda Gates Foundation. http://postsecondary.gatesfoundation.org/wp-content/uploads/2015/07/FAFSA-Approach_FINAL_7_7_15.pdf.
- Bird, Kelli, and Benjamin L. Castleman. 2016. "Here Today, Gone Tomorrow? Investing Rates and Patterns of Financial Aid Renewal Among College Freshmen." *Research in Higher Education* 57 (4): 395-422. https://ideas.repec.org/a/spr/reihed/v57y2016i4d10.1007_s11162-015-9390-y.html.
- Bird, Kelli, Benjamin Castleman, Joshua Goodman, and Cait Lambertson. 2017. "Nudging at a National Scale: Experimental Evidence from a FAFSA Completion Campaign." *EdPolicy Works Working Paper Series* No. 54, March 2017. http://curry.virginia.edu/uploads/resourceLibrary/55_Nudging_at_a_National_Scale.pdf.

- Boatman, Angela, Brent Evans, and Adela Soliz. 2014. *Applying the Lessons of Behavioral Economics to Improve the Federal Student Loan Programs: Six Policy Recommendations*. Indianapolis, IN: Lumina Foundation. https://www.luminafoundation.org/files/publications/ideas_summit/Applying_the_Lessons_of_Behavioral_Economics_to_improve_the_Federal_Policy_Loan_Programs.pdf.
- Burdman, Pamela. 2005. "The Student Debt Dilemma: Debt Aversion as a Barrier to College Access." University of California Berkeley Center for Studies in Higher Education, October 2005. <https://cshe.berkeley.edu/sites/default/files/publications/rop.burdman.13.05.pdf>.
- Castleman, Ben. 2017. *Behavioral Insights for Federal Higher Education Policy*. Washington, DC: Urban Institute. https://www.urban.org/sites/default/files/publication/93376/behavioral-insights_2.pdf.
- Castleman, Benjamin L., Lindsay C. Page, and Ashley L. Snowdon. 2013. *Strategic Data Project Summer Melt Handbook: A Guide to Investigating and Responding to Summer Melt*. Cambridge, MA: Harvard University Center for Education Policy Research. <https://sdp.cepr.harvard.edu/files/cepr-sdp/files/sdp-summer-melt-handbook.pdf>.
- Castleman, Benjamin L., and Bridget Terry Long. 2016. "Looking beyond Enrollment: The Causal Effect of Need-Based Grants on College Access, Persistence, and Graduation." *Journal of Labor Economics* 34 (4): 1023-1073. <https://www.journals.uchicago.edu/doi/pdfplus/10.1086/686643>.
- Chingos, Matthew M. 2018. "Opportunities to Simplify and Modernize Federal Student Aid." Testimony of Matthew M. Chingos before the U.S. Senate HELP Committee, January 18, 2018. https://www.urban.org/sites/default/files/publication/95876/opportunities_to_simplify_and_modernize_federal_student_aid.pdf.
- College Board. 2018. "Trends in Student Aid 2018." College Board. <https://trends.collegeboard.org/student-aid>.
- Cox, James C., Daniel Kreisman, and Susan Dynarski. 2018. "Designed to Fail: Effects of the Default Option and Information Complexity on Student Loan Repayment." National Bureau of Economic Research (NBER) Working Paper 25258, November 2018. https://www.nber.org/papers/w25258?utm_campaign=ntwh&utm_medium=email&utm_source=ntwg2.
- Cunha, Flavio, James J. Heckman, and Salvador Navarro. 2005. "Separating Uncertainty from Heterogeneity in Life Cycle Earnings." NBER Working Paper 11024, January 2005. <https://www.nber.org/papers/w11024.pdf>.
- DeBaun, Bill. 2018a. "FAFSA Completion Increases Sluggish Nationally in 2018-19 Cycle." National College Access Network, last modified July 9, 2018. <http://www.collegeaccess.org/BlogItem?dg=9caef826-6844-46bc-849b-c417673a8de8>.
- . 2018b. "Verification Melt Rate Ticks Up to 25 Percent." National College Access Network, last modified December 12, 2018. <http://www.collegeaccess.org/BlogItem?dg=5b0d35a074c545c6a608357bce9ca4ba>.
- Deming, D., and Susan Dynarski. 2009. "Into College, out of Poverty? Policies to Increase the Postsecondary Attainment of the Poor." NBER Working Paper 15387.
- Dynarski, Susan M. 2003. "Does Aid Matter? Measuring the Effect of Student Aid on College Attendance and Completion." *American Economic Review* 93 (1): 279-288. <https://www.nber.org/papers/w7422>.
- Dynarski, Susan M., and Judith Scott-Clayton. 2006. "The Cost of Complexity in Federal Student Aid: Lessons from Optimal Tax Theory and Behavioral Economics." *National Tax Journal* 59 (2): 319-356. <https://search.proquest.com/docview/203279561/fulltext/26E3D61ADBBC41E7PQ/1?accountid=11243>.
- . 2008. "Complexity and Targeting in Federal Student Aid: A Quantitative Analysis." NBER Working Paper 13801, February 2008. <http://www.nber.org/papers/w13801.pdf>.
- . 2013. "Financial Aid Policy: Lessons from Research." NBER Working Paper 18710, January 2013. <https://www.nber.org/papers/w18710>.
- Ellsberg, Daniel. 1961. "Risk, Ambiguity, and the Savage Axioms." *The Quarterly Journal of Economics* 75 (4): 643-669. <https://www.jstor.org/stable/pdf/1884324.pdf?refreqid=excelsior%3Aa0ea0e5bdd3023f2da37d1997d385ab8>.

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- Evans, Brent J., and Tuan D. Nguyen. 2018. "Monetary Substitution of Loans, Earnings, and Need-based Aid in Postsecondary Education: The Impact of Pell Grant Eligibility." Stanford Center for Education Policy Analysis Working Paper 18-05, March 2018. <https://cepa.stanford.edu/sites/default/files/wp18-05-v201803.pdf>.
- Fox, Craig R., and Amos Tversky. 1995. "Ambiguity Aversion and Comparative Ignorance." *The Quarterly Journal of Economics* 110 (3): 585-603. https://www.jstor.org/stable/pdf/2946693.pdf?casa_token=Tz123N5_ZRoAAAAA:QyC9Qlxq0eL05zmyC5HcLHytlmOPSkVouh4teFV3spzh8HaDs3bD8LZ33SWJ6pmYxM2ClbrRnYWxTYjq1V1Sfln1SGNb_-LjF5NbfUt5iwWNPnDg.
- Frederick, Shane, George Loewenstein, and Ted O'Donoghue. 2002. "Time Discounting and Time Preference: A Critical Review." *Journal of Economic Literature* 40 (2): 351-401. <https://www.aeaweb.org/articles?id=10.1257/002205102320161311>.
- Fuller, Matthew B. 2014. "A History of Financial Aid to Students." *Journal of Student Financial Aid* 44 (1): 42-68. <https://publications.nasfaa.org/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1078&context=jsfa>.
- Gandhi, Sima J. 2008. "Understanding Students from a Behavioral Economics Perspective: How Accelerating Student Loan Subsidies Generates More Bang for the Buck." *Kansas Journal of Law & Public Policy* 17 (2). https://law.ku.edu/sites/law.drupal.ku.edu/files/docs/law_journal/v17/gandhi.pdf.
- Harris, Christopher and David Laibson. 2001. "Hyperbolic Discounting and Consumption." *Advances in Economics and Econometrics: Theory and Applications*. https://scholar.harvard.edu/files/laibson/files/hyperbolic_discounting_and_consumption.pdf.
- Hegji, Alexandra. 2016. *The Higher Education Act (HEA): A Primer*. Washington, DC: Congressional Research Service.
- Hout, Michael. 2012. "Social and Economic Returns to College Education in the United States." *Annual Review of Sociology* 38: 379-400. http://www.jstor.org/stable/23254601?pq-origsite=summon&seq=1#page_scan_tab_contents.
- Kahneman, Daniel, and Amos Tversky. 1979. "Prospect Theory: An Analysis of Decision Under Risk." *Econometrica* 47 (2): 263-291. <https://www.uzh.ch/cmsssl/suz/dam/jcr:00000000-64a0-5b1c-0000-00003b7ec704/10.05-kahneman-tversky-79.pdf>.
- Kane, Thomas J. 2003. "A Quasi-Experimental Estimate of the Impact of Financial Aid on College-Going." NBER Working Paper 9703.
- Kreighbaum, Andrew. 2017. "Irretrievable Aid Data." Inside Higher Ed, March 10, 2017. <https://www.insidehighered.com/news/2017/03/10/aid-deadlines-approach-automated-irs-data-retrieval-unavailable-students>.
- Long, Bridget Terry. 2004. *The Role of Perceptions and Information in College Access: An Exploratory Review of the Literature and Possible Data Sources*. Boston, MA: The Education Resources Institute (TERI). https://www.researchgate.net/publication/228539840_The_Role_of_Perceptions_and_Information_in_College_Access_An_Exploratory_Review_of_the_Literature_and_Possible_Data_Sources.
- Ma, Jennifer, Matea Pender, and Meredith Welch. 2016. *Education Pays 2016: The Benefits of Higher Education for Individuals and Society*. New York: College Board. <https://trends.collegeboard.org/sites/default/files/education-pays-2016-full-report.pdf>.
- Manski, Charles F. 1993. "Adolescent Econometricians: How Do Youth Infer the Returns to Schooling?" *In Studies of Supply and Demand in Higher Education*, edited by Charles T. Clotfelter and Michael Rothschild, 43-60. Chicago: University of Chicago Press. <https://www.nber.org/chapters/c6097.pdf>.
- Marx, Benjamin M., and Lesley J. Turner. 2017. "Student Loan Nudges: Experimental Evidence on Borrowing and Educational Attainment." NBER Working Paper 24060, November 2017. <http://www.nber.org/papers/w24060.pdf>.
- Mullainathan, Sendhil and Richard H. Thaler. 2000. "Behavioral Economics." NBER Working Paper 7948, October 2000. <https://www.nber.org/papers/w7948.pdf>.

- National Association of Student Financial Aid Administrators (NASFAA). 2015. *NASFAA FAFSA Working Group Report: FAFSA Simplification*. Washington, DC: NASFAA. https://www.nasfaa.org/uploads/documents/fafsa_report_1.pdf.
- Oreopoulos, Philip, and Uros Petronijevic. 2013. "Making College Worth It: A Review of Research on the Returns to Higher Education." NBER Working Paper 19053, May 2013. <https://www.nber.org/papers/w19053.pdf>.
- Roberson, Amanda Janice, Jamey Rorison, and Mamie Voight. 2017. *A Blueprint for Better Information: Recommendations for a Federal Postsecondary Student-Level Data Network*. Washington, DC: Institute for Higher Education Policy. http://www.ihep.org/sites/default/files/uploads/docs/pubs/a_blueprint_for_better_information_ihep.pdf.
- Ross, Terrance F. 2015. "Why Are So Many College Students Turning Down Free Money?" *The Atlantic*, February 25, 2015. <https://www.theatlantic.com/education/archive/2015/02/why-are-so-many-college-students-turning-down-free-money/386003/>.
- Rotherham, Andrew J. 2012. "How to Fix Pell Grants." *Time Ideas*, May 24, 2012. <http://ideas.time.com/2012/05/24/how-to-fix-pell-grants/>.
- Rueben, Kim, Sarah Gault, and Sandy Baum. 2015. *Simplifying Federal Student Aid: How Do the Plans Stack Up?* Washington, DC: Urban Institute. <https://www.urban.org/research/publication/simplifying-federal-student-aid-how-do-plans-stack>.
- Schneider, Mark. 2017. "Reforms to Increase Transparency in Higher Education." Testimony of Mark Schneider before the U.S. House of Representatives Subcommittee on Higher Education, May 24, 2017. <https://www.air.org/resource/reforms-increase-transparency-higher-education>.
- Scott-Clayton, Judith. 2012. "Information Constraints and Financial Aid Policy." NBER Working Paper 17811. <https://www.nber.org/papers/w17811.pdf>
- . 2017. "Financial Aid Simplification: Why It Matters and Which Aspects Matter Most." Testimony of Judith Scott-Clayton before the U.S Senate Committee on Health, Education, Labor, and Pensions (HELP), November 28, 2017. <https://www.help.senate.gov/imo/media/doc/Scott-Clayton3.pdf>.
- Scott-Clayton, Judith, and Basit Zafar. 2016. "Financial Aid, Debt Management, and Socioeconomic Outcomes: Post-College Effects of Merit-Based Aid." NBER Working Paper 22574, August 2016. <http://www.nber.org/papers/w22574>.
- Simon, Herbert A. 1990. "Invariants of Human Behavior." *Annual Review of Psychology* 41: 1-20. <https://www.annualreviews.org/doi/pdf/10.1146/annurev.ps.41.020190.000245>.
- Smith, Ashley A. 2018. "Income Verification for Federal Aid Hinders Low-income Students." Inside Higher Ed, October 12, 2018. <https://www.insidehighered.com/news/2018/10/12/college-officials-concerned-about-high-number-low-income-students-selected-federal>.
- Thaler, Richard H., and Cass R. Sunstein. 2003. "Libertarian Paternalism." *The American Economic Review* 93 (2): 175-179. <https://www.aeaweb.org/articles?id=10.1257/000282803321947001>.
- . 2008. *Nudge: Improving Decisions About Health, Wealth, and Happiness*. New Haven, CT: Yale University Press.
- Thaler, Richard H., Cass R. Sunstein, and John P. Balz. 2010. "Choice Architecture." <https://www.sas.upenn.edu/~baron/475/choice.architecture.pdf>.
- The Institute for College Access & Success (TICAS). 2016. *On the Sidelines of Simplification: Stories of Navigating the FAFSA Verification Process*. Washington, DC: TICAS. https://ticas.org/sites/default/files/pub_files/on_the_sidelines_of_simplification.pdf.
- Venator, Joanna and Richard V. Reeves. 2015. *Three Reasons College Matters for Social Mobility*. Washington, DC: The Brookings Institution. <https://www.brookings.edu/blog/social-mobility-memos/2015/02/06/three-reasons-college-matters-for-social-mobility/>.



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