The Feasibility of Delivering Aid for College Through the Tax System

Susan M. Dynarski
Harvard University, Kennedy School of Government
& National Bureau of Economic Research

Judith E. Scott-Clayton
Harvard University, Kennedy School of Government

National Tax Association Annual Conference
November 17, 2006

The federal system for distributing student financial aid rivals the tax code in its complexity. Both have been a source of frustration and a focus of reform efforts for decades, yet the complexity of the student aid system has received comparatively little attention from economists. We describe the complexity of the aid system, and apply lessons from optimal tax theory and behavioral economics to show that complexity is a serious obstacle to both efficiency and equity in the distribution of student aid. We show that complexity disproportionately burdens those with the least ability to pay and undermines redistributive goals. We then use detailed data from federal student aid applications to show that the benefits of complexity, in terms of improved targeting, are small. A radically simplified aid process can reproduce the current distribution of federal Pell Grants using a fraction of the information now collected. Since the essential data elements are already collected by the tax system, we discuss how Pell Grants could be administered through the tax system, eliminating the current burdensome and largely redundant federal student aid application.

Introduction

The complexity of the federal tax code has been the focus of reform efforts for decades, and has received considerable attention in the economic literature. The federal system for distributing student financial aid is similarly convoluted, yet has received relatively little attention from economists. For the typical household, the aid application (the Free Application for Federal Student Aid, known as the 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.

The consequences of complexity and uncertainty in aid extend beyond annoyance and frustration. The intent of financial aid is to reduce the cost of college, thereby encouraging college attendance. We argue that complexity disproportionately burdens those on the margin of college entry, thereby blunting the impact of aid on their schooling decisions. Uncertainty about aid similarly blunts its impact on behavior: high school students most sensitive to cost are unlikely to start down the path to college if they do not know it is affordable. For those on the margin of college entry, concrete information about aid simply arrives too late.

Evidence on the behavioral impact of aid supports our argument. While simple, easily communicated aid programs have been shown to have a robust impact on college entry and completion, we have little to no compelling evidence that the traditional forms of student aid (which require a FAFSA) increase schooling for their target populations. Complexity may be the culprit. Simply put, potential college students cannot respond to a price subsidy if they do not know it exists. As both the "sticker price" of college and aid for college have risen sharply, the net price of college has grown increasingly individualized, making it difficult for prospective students to estimate their own schooling costs. Most high school students overestimate the cost

of attendance, but this confusion is of greater consequence for low-income students, who (unlike their upper-income counterparts) are pessimistic about their ability to pay for college (Avery and Kane, 2004).

We use well-known principles of optimal tax policy, as well as more recent insights from behavioral economics, to evaluate the costs of complexity in student financial aid. We demonstrate that provisions intended to precisely target aid produce regressive compliance costs. These costs rightly belong in our cost-benefit calculation when we consider the efficiency and equity of a given targeting provision.[1] The costs of aid complexity fall heavily on low-income, non-white and non-English speaking youth, whose lagging educational levels are repeatedly cited as a justification for financial aid. Though from a rational perspective these compliance costs may seem small relative to the payoff of a college degree, the behavioral literature demonstrates conclusively that even seemingly minor complexities can have profound impacts upon the equity and efficiency of a policy.

We show not only that the *costs* of complexity in student aid are large, but also that the concomitant benefits are quite small. With student-level data from the 2003-04 National Postsecondary Student Aid Survey (NPSAS:04), we show that much of the complexity in the aid system fails to improve the targeting of aid. We find that the aid system imposes large costs in order to measure small differences in ability to pay. Nearly all of the variation in aid is generated by a handful of the more than 70 data items used in the aid formula. Parents' adjusted gross income (or, for tax non-filers, earnings from work), marital status, family size, and the number of family members in college explain over three-quarters of the variation in Pell Grant awards. With only a few more variables, we can replicate 90 percent of the variation in Pell Grants for

[1] Kaplow, 1996 makes this point in the context of the income tax system. The Final Report of the President's Advisory Panel on Federal Tax Reform repeatedly sounds the same theme.

dependent students. Our radically simplified aid calculation throws out 80 percent of the financial items on the aid application. This aid application could fit on a single page.

Since the IRS 1040EZ already collects the key pieces of data that determine aid eligibility (adjusted gross income and dependency status), a feasible option would be to eliminate the FAFSA completely and run student aid entirely through the tax system. The need-based Pell Grant program could be combined with the current jumble of federal tax credits for higher education to create a single, easy-to-understand grant program. Families could apply for this grant by checking off a box on their federal tax form. We describe how funds could be delivered when they are needed, at the time of college enrollment.[2] This approach would cut back on paperwork and enable families to learn about their aid eligibility years in advance. We describe how such a system might work, as well as potential obstacles it might face.

A simple aid program is an easily-communicated aid program. Simplification would allow personalized information about aid to be communicated to families *early*. Just as workers are annually sent projections of their Social Security benefits to help them plan for retirement, families could be sent estimates of their aid eligibility to help them plan for college. Under the current system, students do not get accurate information about student aid until late spring of senior year in high school. Early information about federal help for paying for college is critical for low-income families. If the goal of aid is to encourage college attendance, then the end of the final year of high school is simply too late for information about subsidies to arrive.

Our paper is emphatically not an argument against progressivity in aid. An aid system, like a tax system, can be both simple and progressive, and we conclude that reducing complexity in aid would be both efficient and equitable. The current aid system creates formidable barriers

[2] We focus this paper on grants, to keep the analytics tractable and the discussion uncluttered. The concepts of the paper apply equally to eligibility for government-subsidized student loans. Subsidized loan eligibility, like grant eligibility, can be predicted with a handful of variables instead of the dozens in the FAFSA.

to college. A key lesson of our research is that we can dismantle these barriers if we are willing to tolerate minor imperfections in measuring ability to pay. This, we believe, is a worthwhile tradeoff. Reducing unnecessary complexity will allow aid to serve its intended goal: opening the doors of college to those who have the ability but not the means to further their education.

Financial Aid Overview

Two agencies provide subsidies to college students and their families: the Department of Education and the Internal Revenue Service:

The Department of Education (Pell Grants)

The Department of Education administers the Pell Grant program, which delivered $13 billion to five million students in the 2004-05 academic year (expenditure data are from College Board, 2005). These grants averaged $2,500 per recipient, with a maximum value of $4,050. Pell Grants are highly progressive, flowing almost exclusively to families with incomes below $40,000 (Stedman, 2003).

The Free Application for Federal Student Aid (FAFSA) is required for the Pell Grant. The FAFSA collects basic demographics (e.g., name, social security number, citizenship, date of birth, etc.) as well as detailed information about the student's and parents' income, assets, and expenditures. See Appendix for a copy of the 2006-07 FAFSA. Families cannot obtain an estimate of their federal aid eligibility without submitting a FAFSA.[3] Prospective freshmen cannot file a FAFSA until January of their senior year of high school. The aid determination process is summarized in Figure 1.

[FIGURE 1 ABOUT HERE]

[3] Some websites offer EFC calculators, which require the same data as the FAFSA. An enterprising student or parent could therefore calculate the EFC without completing a FAFSA. We would hazard that, for a family that is able to do this sort of sleuthing, federal financial aid is not a determinative factor in the college entry decision.

Once the FAFSA is submitted, the U.S. Department of Education computes the expected family contribution (EFC), an estimate of how much the family can pay out of pocket for college. "Need" is defined as the difference between the cost of attendance (e.g., tuition, fees, books, and living expenses) and this family contribution. The EFC, but not any estimate of aid eligibility, is mailed to the applicant as well as the colleges to which she has applied (U.S. Department of Education, 2005d). Using the EFC, colleges personalize a package of grants and loans for each student, which they then mail out in the form of award letters, typically in March and April. Only upon receiving these award letters do students know how much college will cost for the upcoming year.

In Table 1 we compare the FAFSA to the IRS 1040, 1040A and 1040EZ income tax forms. The FAFSA, at five pages and 127 questions, is lengthier than Form1040EZ (one page, with 37 questions) and Form 1040A (two pages, with 83 questions). It is comparable to Form 1040 (two pages, with 118 questions). With this comparison we do not mean to suggest that the U.S. tax system is a paradigm of simplicity. The statistics in Table 1 understate the complexity faced by taxpayers who must fill out additional worksheets and schedules in order to complete the questions listed on the 1040. But for the families targeted by need-based aid, complexity in the aid application rivals the complexity they experience in the income tax system. Most families eligible for the Pell file the shorter 1040A or 1040EZ; 86 percent of filing households with income below $50,000 (and two-thirds of all households) use these simplified IRS forms. The contrast between Form 1040EZ and the FAFSA is especially striking. With a third of the FAFSA's questions and a fifth of its pages, the IRS captures the information needed to determine tax liability for the very population targeted by need-based aid.

[TABLE 1 ABOUT HERE]

Why is the FAFSA so long? In part, because the aid formula applies different "tax rates" to the student's and parents' resources, and so asks separate questions about each.[4] But, as Table 1 shows, the FAFSA demands more detailed measures of financial resources than do the income tax forms. Thirty-three FAFSA questions probe for sources of income not shown on the W-2, compared to two on the 1040EZ, 12 on the 1040A and 19 on the 1040. Further, while none of the tax forms ask about assets, the FAFSA has six questions on this topic.

The IRS estimates it takes 16 hours to complete a 1040. The 1040A and 1040EZ are estimated to require 13 and eight hours, respectively. These are likely conservative estimates: Blumenthal and Slemrod (1992) conclude that the time required for tax compliance averages 27 hours per filing household, and is longer for low- and high-income households. The U.S. Department of Education improbably estimates that it takes one hour to complete the FAFSA.

An obvious point, but one worth stating in this context, is that when a taxpayer has completed her 1040, she knows how much tax she owes. To this end, twenty-one of the questions on the 1040 are calculations or look-ups from tax tables. Completing the FAFSA yields no comparable information about aid eligibility. We will return to this point later in the paper. For now, we simply highlight the fact that, upon completing the FAFSA, the aid applicant is no more informed about her financial aid eligibility than she was when she began.

The Internal Revenue Service (Tax Credits and Deductions)

The Internal Revenue Service administers the tax incentives for higher education. These provisions include the Hope tax credit, the Lifetime Learning tax credit, and the deduction for

[4] The highest tax rate on parental assets is about six percent for each year of college, while the student's assets can be taxed at 35 percent (this rate will fall to 20 percent as of the 2007-2008 academic year). The marginal tax rate on parental income ranges from 22 to 47 percent. For student earnings the tax rate is zero below an earnings protection allowance and 50 percent above that allowance. See Dynarski (2004b) for a discussion of how the aid tax on assets varies by ownership and asset type.

college tuition and fees.[5] The Hope and Lifetime Learning credits are worth up to $1,500 and $2,000, respectively, with eligibility depending on college costs, year in college, and tax liability. Neither credit is refundable, which means that those who are too poor to owe taxes do not get a credit. The deduction allows parents to deduct up to $4,000 in tuition costs from their taxable income; the value of this deduction depends on the household's marginal tax rate, with the highest values accruing to those in the upper brackets. The value to taxpayers in 2005 of these provisions was $8 billion.[6]

Application for the tax credits occurs when a family files its tax return. A family can apply for a credit only for schooling expenses incurred the preceding tax year. This means that these subsidies arrive up to sixteen months after tuition has been paid. Consider a student who pays her tuition for spring semester of academic year 2005-2006 in January of 2006, a typical schedule. Her family will file for its Hope or Lifetime Learning credit sixteen months later, in April 2007. The value of the credit is known only after a family knows its tax liability for 2006, after all income has been earned. The value of the credits is therefore highly uncertain, and is not even revealed until well after the student has gone to school.

Both the Pell Grant program and the education tax benefit programs are beset by complexity. In the next section, we present our argument for why complexity matters. We focus on complexity in the Pell Grant application process, since this is the largest federal education benefit and because complexity in taxation systems has received much more attention in the literature. In the final section, we will describe how this complexity could be substantially reduced.

[5] Other tax incentives for education are the tax-preferred savings plans known as the Coverdell Education Savings Account and 529 Savings Plans (see Dynarski, 2003a and 2003b) and the student loan interest deduction.
[6] Joint Committee on Taxation, 2006. *Estimates of Federal Tax Expenditures for Fiscal Years 2006-2010*, p. 37. Washington: U.S. Government Printing Office (http://www.house.gov/jct/s-2-06.pdf).

Insights from Optimal Tax Theory

Complexity in the tax system arises from attempts to precisely measure taxpayers' ability to pay.[7] Analogously, 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 literature (Kaplow, 1990 and 1996), measuring income more accurately produces costs to society that are frequently ignored by policy-makers and analysts. Kaplow (1996) offers the following illustrative example. Consider two people with "true" income of $40,000. Unless a deduction is allowed (say, for unusual health expenses) one person will have a reported income of $45,000. Creating the deduction will allow for more accurate measurement of income, so the added complexity has a benefit: it prevents us from reducing one person's income below its socially optimal level. But there are also costs to this new provision:

1) *compliance costs* for taxpayers, such as time spent learning about the rules and formulas, record-keeping, and completing forms.
2) *administrative costs* for the government (or schools), which are ultimately paid by taxpayers in the form of higher taxes or reduced services.
3) *efficiency loss* as taxpayers alter their behavior so as to shield income under the deduction.

These costs of complexity should be weighed against its benefits in determining whether a given aspect of the tax code (or aid system) enhances social welfare. The needs of low-income students clearly weigh heavily in our calculation of social welfare, or else we would not have a progressive grant system then targets them for subsidy. The needs of low-income students should then also weigh heavily when we add up the *costs* they must incur in order to obtain the subsidy.

[7] Complexity can also arise when policymakers "deviate from tax principles in order to subsidize certain activities and groups (Kaplow, 1996)." For example, the mortgage interest deduction and 401(k) are tax provisions intended to encourage homeownership and retirement saving, respectively.

In the language of economics, compliance costs that fall on a group with high weight in our social welfare function will disproportionately reduce social welfare, just as transfer to that group will increase social welfare. A key lesson is that any policy intended to redistribute income should be carefully crafted so that it does not create costs that outweigh its benefits.

The case of the Earned Income Tax Credit illustrates how in a progressive program compliance costs can have a regressive impact. Despite the large value of this credit, non-participation in the program is substantial and a perennial source of concern (Greenstein, 2005). Applying for the EITC may be quite daunting for the target population (Berube et al., 2002). Recently, H&R Block and other tax preparers have found a market niche filing tax returns for low-income families eligible for the credit, and as a result seventy-five percent of EITC recipients now use a tax preparer (President's Advisory Panel on Federal Tax Reform, 2005). Both parties benefit – the taxpayer gets a credit, and tax preparers take a cut in the form of a $100 fee and (annualized) interest rates exceeding 200 percent charged on "refund loans" (Berube et al., 2002). A full accounting of the costs and benefits of the EITC would include these as compliance costs. Compliance costs clearly reduce the progressivity of the EITC, since part of the EITC leaks to tax preparers. A simplification that at first blush appears to reduce the progressivity of the EITC may prove progressive were it to reduce this leakage. We argue that the same holds in the aid system: a simplification that appears distributionally neutral may prove progressive in its incidence.

Consider the case in which we seek to measure ability to pay for college more accurately by asking questions about untaxed income, such as welfare benefits and disability benefits. Such questions account for much of the complexity in the aid application. These questions are asked in order to withhold aid from families that can pay more out of pocket than implied by a less

precise measure of income. The benefit of this added complexity is that money can be now channeled toward more optimal uses: more "needy" aid recipients, other government programs, or lower tax rates. If the source of income is quite rare, then only a small amount of money will be freed up in this way, yet every aid applicant must still read through the additional questions and instructions in order to determine whether any of her income falls into the relevant category. In this case, compliance costs could easily outweigh the freed-up funds produced by the additional questions.

In some cases, costs can enhance efficiency *because* they fall on those seeking the transfer (Akerlof, 1978; Nichols and Zeckhauser, 1982). For example, requiring people to wait in long lines in order to receive welfare benefits may be efficient if those with the least need have the highest opportunity cost of their time. In this case, compliance costs help to screen out those who are not the intended targets of the transfer. But the inverse also holds: if compliance costs fall most heavily on the intended targets of the transfer, redistribution is less efficient. In the extreme, costs may drive the targeted group out of the program.[8] As we discuss shortly, compliance costs for student aid are likely highest for the poorest families, and may deflect some their intended target (low-income families) from applying.

Efficiency Loss and Administrative Costs Induced by Complexity in Aid

Compliance costs are the focus of our analysis, so we will only briefly address the efficiency and administrative costs of complexity.

At the core of public finance is the principle that an efficient tax system taxes the broadest base at the lowest rate. Variation in tax rates (induced, for example, by excluding some

[8] Indeed, there is evidence that complexity in the provision of social benefits reduces the take-up of transfers (Bitler, Currie, and Scholz, 2003; Brien and Swann, 1999; see literature review by Currie, 2004).

goods from taxation) creates incentives and opportunities for gaming the system, such as shifting assets into untaxed financial vehicles. This has equity consequences, since these strategies are implemented only by those who have the resources to play the game – e.g., those who can hire advisers to find clever shelters for their income and assets. Tellingly, an industry of highly-paid aid advisers has emerged to guide families through the aid system.

The administrative costs of student aid accrue to both the government and colleges. The government's administrative costs (excluding the administration of federal direct student loans) are not strikingly high in comparison with the billions of dollars of aid distributed: an annual report from the Office for Student Financial Assistance estimated an operational/overhead cost of about $19 per unduplicated grant/loan aid recipient in 2000, which would imply administrative costs of approximately $179 million in 2004 (U.S. Dept. of Education, 2002c).[9]

The lion's share of administrative costs are borne by the colleges themselves, who are responsible for answering students' questions, verifying student information, and packaging and disbursing federal student aid. Financial aid administrators and support staff paid by the colleges are responsible for these tasks. To pay colleges' administrative costs, the Department of Education allocated to schools administrative allowances of $83.4 million in 2005.[10] However, schools almost certainly incur costs far in excess of this allowance. Estimates of the annual cost of audits alone range from $132 million (US Office of the Inspector General) to $432 million (Advisory Committee on Student Financial Assistance, 2005).[11] The lower bound of these estimates exceeds the entire administrative allowance for 2005. Note that since the colleges'

[9] In 2004 there were 9.4 million unduplicated aid recipients (U.S. Dept. of Education, 2005e, http://www.ed.gov/about/overview/budget/budget06/summary/edlite-section2d.html#tables).
[10] Calculated from data at http://www.ed.gov/about/overview/budget/budget06/summary/edlite-section2d.html#tables. Schools can allocate to administrative costs five percent of their funds for Supplemental Educational Opportunity Grants, work-study, and Perkins Loans; these aid sources totaled $3.3 billion in 2005. Schools are also allocated five dollars per Pell Grant recipient, of which there were 5.33 million in 2005.
[11] The OIG and ACSFA estimates are contained (respectively) in US Department of Education (2002a) and Advisory Committee on Student Financial Assistance (2005).

costs are not a line item in the federal budget, they are likely to be overlooked when policymakers consider the costs and benefits of complexity in the aid process.

Compliance Costs Induced by Complexity in Aid

Compliance costs, which fall on applicants, are the focus of our analysis. Compliance costs include the time and resources required to learn about the system and its rules, collect all of the required documents, and fill out the form. Though low-income families likely have a relatively low opportunity cost of time, the *length* of time required to learn about and comply with any given provision of the aid process is higher for low-income families. In addition, some families face barriers (such as language) that additional time does little to diminish.

Low-income families have little prior experience with the aid system, since the parents are unlikely to have gone to college and applied for aid themselves. Half of low-income high school seniors do not have a parent who ever attended college.[12] Their classmates and siblings are also relatively unlikely to attend college. This lack of college-going peers and relatives blocks a channel that could communicate information about need-based aid to the target population. Liebman (1998) concludes that peers play a crucial role in informally transmitting information about the EITC, a complicated tax program that encourages work by partially matching the wages of low-income parents.[13] A non-working, low-income mother may observe the improving financial position of neighbors who have entered the workforce and (unknown to her) received the EITC. Even if she does not understand the structure of the EITC's incentives, she may respond *as if she did*, and enter the workforce. Since 80 percent of families with incomes between 100 and 150 percent of the poverty line receive the EITC, this is a plausible scenario; a poor person is likely to know someone benefiting from the EITC. By contrast, just 34% of low-income black youth and 33% of low-income Hispanics have even attempted college, severely limiting the informal transmission of information about college costs within these populations.[14]

[12] Authors' calculations using data from the National Education Longitudinal Survey of 1988 (U.S. Department of Education, 2002b), comparing families with income below $25,000 to those with income above $50,000.
[13] Bertrand, Luttmer, and Mullainathan (2000) and Duflo and Saez (2003) show that social networks have a strong influence on welfare participation and saving behavior, respectively.
[14] Authors' calculations using the National Longitudinal Survey of Youth, 1997. We measure college entry by 1999 for those who were 16 to 17 years old in 1997, which is when family income is measured. Low income is defined as having family income below $20,000 in 1997.

People can learn about complicated programs not only from observing peers' transactions but also through their own repeated transactions. Liebman and Zeckhauser (2004) conclude that when faced with complicated price schedules (such as those for cell phone contracts) people may respond not to marginal prices but "average" prices gleaned from past experience. In the case of college, interactions with the aid system for a given family are infrequent, so opportunities for backing out average prices are rare.

Language is another barrier, with 13 percent of low-income students primarily speaking a language other than English at home, double the rate of families with above-median incomes.[15] Even the basic step of locating financial records is an obstacle for poor students, due to higher mobility rates and family dysfunctions such as divorce and separation of children from parents. Low-income families are substantially less likely to have access to the internet at home, a handicap in a system that relies heavily upon the web for the dissemination of information and is moving towards an exclusively on-line application system. In 2003, over two-thirds of children from families with incomes below $25,000 had no access to the internet at home, compared to 12 percent of families with incomes above $50,000.[16] Families may be reluctant to bring financial documents to a school or a library in order to enter these data into a public computer.

In sum, poorer families are likely to face greater costs of learning about the aid system, collecting the required documents, and completing the aid form. The costs of aid complexity are regressive, falling heavily on low-income, non-white and non-English speaking youth whose lagging educational levels are repeatedly cited as a justification for need-based financial aid. These costs rightly belong in our cost-benefit calculation when we consider the efficiency and

[15] Ibid.
[16] Source: Authors' computations using published tables from the 2003 Computer and Internet Supplement to the Current Population Survey, http://www.census.gov/prod/2005pubs/p23-208.pdf.

equity of a given targeting provision.[17] Though from a rational perspective these compliance costs may seem small relative to the payoff of a college degree, the behavioral literature demonstrates conclusively that even seemingly minor complexities can have profound impacts upon the equity and efficiency of a policy.

Insights from Behavioral Economics

We have made the case that the cost of compliance in the aid system is substantial, especially for low-income families, and that this complexity blunts the impact of the subsidies on schooling decisions. However, a valid rejoinder to this 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 such relatively small compliance costs must have an unusually low expected return to college.

A key insight of behavioral economics is that people systematically do not behave rationally, even in matters where we might most expect calculating rationality. Indeed, individuals deviate from rationality in highly predictable ways that tend to shock only economists. In this section, we provide a brief overview of insights that behavioral economics can offer in the realm of student aid and college attendance.

Time Inconsistency

People are poor at committing to behaviors that require present sacrifice in pursuit of future returns (O'Donoghue and Rabin, 1999). This characterizes a broad range of behaviors,

[17] If this line of argument sounds eerily familiar, it is because it was made in the pages of this journal (Kaplow, 1996) in the context of the income tax system. The Final Report of the President's Advisory Panel on Federal Tax Reform repeatedly sounds the same theme.

including saving for retirement, exercise, and schooling. People may plan to get up early to exercise, but hit the snooze button when the alarm goes off. They may plan to save for retirement, but never enroll in their employer's 401(k). They may plan to go to college, but fail to fill out their FAFSA or register for the SAT. While they may firmly believe that saving or exercise or college is the right choice, when the time comes to make the required sacrifice, commitment falters. These are examples of what economists refer to as time-inconsistent preferences.

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 (Thaler, 1994), we would not expect all teenagers who would benefit from aid to apply.

Loss Aversion

Nobel Laureates Daniel Kahneman and Amos Tversky (2000) show that people are loss averse: they avoid worthwhile bets because "losses weigh more heavily than gains." That is, a dollar lost decreases utility more than a dollar gained increases it. In lab experiments and in real-world settings, people "underweight outcomes that are merely probable in comparison with outcomes that are obtained with certainty" (Kahneman and Tversky, 2000). When it is the gains that are probable and the losses that are certain, this will lead to risk aversion and avoidance of even "good bets." Certain costs and probable gains characterize college. Students must apply for aid, give up earnings, pay tuition, and study. These are certain outlays. By contrast, students

cannot know with certainty how well their investment will pay off. While, on average, college is a good bet, there is enormous variance in the earnings of college graduates. For some, college will not pay off, and this possibility may weigh heavily in schooling decisions due to loss aversion.

Default Behavior

Economists and psychologists have found that individuals' decisions are strongly influenced by their "default" course of action (Samuelson and Zeckhauser, 1988). An influential study examined retirement saving at a large financial firm (Madrian and Shea, 2001). At this firm, 401(k) participation required that new employees check a box on a form; the consequence of *not* checking that box was *not* participating in the 401(k). That is, the default option was non-participation. Despite the low transaction costs of enrollment and strong financial incentives (tax advantages plus an employer match of savings), participation rates were low. The company made a minor change: *non*-participation now required that the new employee check a box on a form and so participation was the default option. This small change in program design had a profound effect on behavior, increasing participation by 50 percentage points.

Seemingly minor obstacles put low-income youth off the path to college, much as adults are put off the path to saving by bureaucratic details. A study of high school seniors in Boston found that few low-income youth "decide" against college. Rather, they miss a key deadline, or incorrectly fill out a form, or fail to take a required class, and thereby fall off the path to college (Avery and Kane, 2004). For upper-income teenagers, the affirmative actions of their parents and schools establish college entry as the "default" path. Their high schools guide them through the multiple steps and deadlines of the college and financial aid process. Schools provide SAT

preparation on site, schedule exams for students, organize the writing of recommendations, and remind students repeatedly about relevant deadlines. Informal guidance and support is also provided by their college-educated relatives and neighbors, who act as *de facto* guidance counselors.

By contrast, due to their comparatively weak institutional and social supports, the default option for low-income students is to not go to college. Navigating the maze of college and aid application requires both formal and informal support. Lower-income schools receive fewer visits from college representatives and have fewer guidance counselors per student.[18] Parents and siblings are not likely have gone to college, and so cannot compensate for this lack of institutional support.

Identity Salience

A program may discourage participation through the self-identification it triggers in people. The food stamp application process, for example, "cues negative identities and can induce guilt and alienation," thereby discouraging take-up (Bertrand, Mullainathan, and Shafir, 2004). The FAFSA is rich with negative cues relating to poverty and criminal activity. The FAFSA asks "Have you ever been convicted of possessing or selling illegal drugs? If you have, answer 'Yes,' complete and submit this application, and we will send you a worksheet in the mail for you to determine if your conviction affects your eligibility for aid." The final step in submitting a FAFSA is the signing of a statement which concludes with "If you purposely give false or misleading information, you may be fined $20,000, sent to prison, or both." The full signing statement is nearly five times longer than that on IRS Form 1040. Multiple questions

[18] Data on college representatives comes from NELS:88-2000, 1992 school survey. Counselors comes from *The Condition of Education 2000*, Indicator 28, see also Indicator 27.

about welfare payments repeatedly remind low-income students about their poverty, while open-ended questions that require the calculation of net worth or income (applicants are asked about "money received, or paid on your behalf (e.g. bills), not reported elsewhere on this form") could generate anxiety among even middle-class applicants.

Evidence of the Impact of Student Aid

There is plenty of evidence that student financial aid *can* have a large impact on behavior. Data from the National Longitudinal Survey of Youth show that the Social Security Student Benefit program substantially increased college enrollment rates among eligible youth (Dynarski, 2003). Under this program, children of Social Security beneficiaries continued to get their benefits past their usual expiration at age 18, as long as they enrolled in college. The compliance costs were minimal. The Social Security Administration sent a letter to child beneficiaries shortly before their 18th birthday, asking if they intended to go to college. If they replied in the affirmative, checks continued to arrive. Renewal required confirmation of enrollment from the college registrar. The program provided early information, in that beneficiary families were familiar with the provision. Families knew the exact amount of the benefit, since they were already receiving it.

Another simple program, Georgia's HOPE Scholarship, requires only that high school students maintain a 3.0 GPA in high school in order to have their tuition and fees paid at any public college in Georgia. High schools proactively send transcript data to the state in order to identify scholarship winners. For most students, the HOPE application consists of a half-page of basic biographical information. High school students are knowledgeable about the program. More than seventy percent of Georgia high-school freshmen surveyed were able to name the

program without prompting. Fifty-nine percent, when asked to list some requirements of HOPE, volunteered that a high school GPA of 3.0 is necessary (Henry, et al, 1998). The program substantially increased college entry in Georgia (Dynarski, 2000), as well as the share of young people completing a college degree (Dynarski, 2005). Research on similar state programs has produced similar findings (Kane, 2003; Dynarski, 2004a and 2005).

By contrast, there is little to no persuasive evidence that the Pell grant program affects college enrollment decisions of young people.[19] A plausible explanation is that the application process screens out students teetering on the margin of college entry. A prospective student who is able to deduce her aid eligibility, apply to college without knowing what resources will be available to pay for it, and successfully complete the FAFSA almost by definition reveals herself as firmly committed to attending college. Similarly, evidence (Long, 2004) indicates that the education tax credits have no impact on college attendance rates.

Simplifying the Aid System

We have argued that the costs of complexity in the federal student aid process are substantial. But don't we need this complexity to target aid at those who need it most? If the FAFSA asks just ten questions instead of 120, don't we risk giving aid to the wrong people? This section examines how much targeting we stand to lose by drastically simplifying the aid process. The short answer is "very little." A handful of the questions on the FAFSA determine eligibility

[19] An early study by Hansen (1983) examined enrollment rates before and after implementation of the Pell Grant program. Hansen found that while enrollment rates of all income groups increased during the 1970s, enrollment among low-income students did not increase disproportionately. Kane (1995) utilizes more years of data and limits the sample to women, whose enrollment patterns were less disrupted by the Vietnam War but is also unable to find an effect. Seftor and Turner (2002) find a small effect of Pell Grants on college enrollment for older, independent students. Bettinger (2004) finds suggestive evidence that Pell Grant size affects college completion, but notes his results are very sensitive.

for federal aid. The dozens of other questions could be jettisoned while still maintaining a progressive program *and* without spending more on aid than we do now.

Our key conclusion is that income and a handful of other pieces of information tell us what we need to know in order to determine a family's ability to pay for college. If we know that a family of four earns $20,000 a year, we also know the family is eligible for the Pell Grant. We don't need to learn about the family's tax deductions, Food Stamps, medical expenses and welfare benefits to reach this conclusion – yet the FAFSA asks all of these questions. Similarly, if a family of three earns $100,000 a year, then we know it won't be getting a Pell Grant. We don't need to know about the family's 401(k) investments, financial assets, and business income to reach this conclusion.

We are interested in the "low-hanging fruit" – that is, identifying complexity that creates barriers to applicants while providing little payback in the form of improved targeting. We use data on student aid applicants and recipients (the nationally representative 2003-04 National Postsecondary Student Aid Survey) to see how far we can go in simplifying aid while still maintaining its progressive nature. Our sample consists of 24,253 dependent and independent undergraduates who attended college full-time in 2003-04 and who applied for federal aid (see Appendix for details).

We first use the NPSAS data to replicate the current distribution of grants.[20] To measure the influence of the various data elements on aid, we sequentially exclude data items from the aid formula and recalculate aid, and then compare the new estimates to their baseline values.[21,22]

[20] We calculate aid using the federal financial aid formula (described in Appendix) and compare these calculated aid amounts with their true values, which are given in the NPSAS. Our calculations of Pell Grants are extremely close to their true values. Regressing the actual against the predicted values yields an R^2 of 0.997.

[21] We are not the first to estimate the predictive power of individual FAFSA items on student aid. Kane (1995) notes that most of the variation in Pell Grants can be explained using just a few variables. Stoll and Stedman (2004) use student-level FAFSA data (from the 1999-2000 NPSAS) to simulate the effect on the EFC of excluding items from the aid calculation.

We use several methods to measure how well the simplified formulas do in replicating the existing distribution of aid. First, we calculate the share of people for whom the difference between the true and simulated aid is less than $100 or $500. Second, we calculate the correlation between the aid amounts that students currently receive and the amounts they would receive with the simplified formula. Third, we plot how aid changes for different groups of students, showing how gains and losses vary with family income.

Approach A: Distribute Aid Using Income, Assets & Family Structure

We start with by throwing out *all* of the data used in the aid calculation except for adjusted gross income of the parents or independent students and their spouses (or, for non-filers, earnings), dependent students' earnings, parents' and students' assets, parents' and students' marital status, family size and number of family members in college. This approach discards parents' and student's taxes paid, the types of income tax forms filed and the required "worksheets" (reproduced in Appendix) that elicit information about transfer income (such as the EITC, welfare, and Social Security) and other income (child support). These worksheets account for 45 of the 70 financial questions used in the calculation of aid.

[TABLE 2 ABOUT HERE]

Using only the items in Simulation A would cut the number of financial questions on the FAFSA by more than 80 percent. Pell Grant eligibility changes by less than $100 for 76 percent of aid applicants. The correlation between the existing Pell and the simulated Pell is 0.95 (with a correlation of 1.0 indicating a perfect correspondence). This approach has a negligible impact on

[22]Mechanically, this is achieved by setting the value of the excluded items to zero. We have also tested setting excluded values to their means or medians, with substantively similar results. For state of residence and elder parent's age, which are excluded from some simulations, a value of zero is not meaningful, so we assign to all applicants the default values that the aid formula imputes when these items are missing from a FAFSA.

program costs, with the average Pell dropping by $14. All of this decrease occurs for families with income over $30,000; families with lower incomes actually see an increase in their grants (see Figure 2).

[FIGURE 2 ABOUT HERE]

Why are we able to throw out so much information about applicants, with so little consequence for their Pell eligibility? First, many of the data items on the FAFSA are relevant to very few families (e.g., living stipends for the military and clergy, foreign income); that is, while these items affect eligibility, they are non-zero for a small number of people.

Second, some of the items are common, but only at the top or bottom of the income distribution (e.g., IRA rollovers and welfare benefits). Those at the top or bottom of the income distribution qualify for no aid or the maximum of aid solely on the basis of their income, rendering additional information about their financial situation irrelevant. If we know that a family of four earns $20,000 a year, we also know the family is eligible for the Pell Grant. We don't need to learn about the family's tax deductions, Food Stamps, medical expenses and welfare benefits to reach this conclusion – yet the FAFSA asks all of these questions. Similarly, if a family of three earns $100,000 a year, then we know it won't be getting a Pell Grant. We don't need to know about the family's 401(k) investments, financial assets, and business income to reach this conclusion. The bottom line is that the dozens of questions we eliminate in our simulation don't currently affect eligibility, despite the substantial compliance costs they create.

Approach B: Distribute Aid Using Income and Family Structure, Dropping Assets

We next discard parents' and student's assets from the calculation of aid. The "taxation" of assets by the aid formula has been roundly criticized by economists. Edlin (1993) and others

have argued that the taxation of assets by the aid formula creates horizontal inequities: identical families with identical lifetime earnings can be treated very differently by the aid system, with aid reduced for the family that has sacrificed consumption in order to save for college.[23]

In practical terms, assets have little impact on the calculation of federal aid. When we drop all assets from the aid formula, only 25 percent of applicants experience any change in their Pell Grant, and only 13 percent experience a change of $500 or more. Excluding assets increases the average Pell at low levels of income (Figure 3). Total Pell expenditures in this simulation increase by just 3.3 percent.

Assets have so little effect on aid eligibility because few households have assets that are included in the formula. Families hold the vast majority of their wealth in homes and retirement funds, both of which are protected by the aid formula.[24] Other financial assets count only if they are above a threshold that increases with the age of the parents (up to $54,500). Among dependent students who file a FAFSA, 85 percent have no assets above the disregard. Among those from families with income below $50,000, it's 93 percent.[25] As a result, for the overwhelmingly majority of families the effective tax rate on assets is already zero – yet the data on assets are still gathered.[26]

It could be the case, however, that families with substantial assets simply do not file a FAFSA, since they know they will not be eligible for aid. In this case, the students filing a FAFSA would be unrepresentative of the entire population of college students, and our proposed simplification would be more expensive that the FAFSA simulations would suggest. We can

[23] A rejoinder is that assets serve as a summary statistic for lifetime earnings, which are imperfectly captured by current earnings. Rather than use assets as a proxy for lifetime earnings, we could instead use Internal Revenue Service data to directly measure multiple years of earnings. We consider this a sensible option worth consideration.
[24] *All* asset information is excluded from the aid calculation for families that qualify for the "simplified needs test" or "automatic zero EFC," both of which we discuss later in the paper.
[25] Authors' calculations from NPSAS.
[26] For 99 percent of aid applicants, the marginal tax rate on assets is zero. We obtain this figure by adding $100 to every applicant's financial assets and recalculating aid. For 99 percent of the sample, Pell eligibility is unchanged.

easily check on this by comparing assets of current FAFSA applicants to assets of all households with similar incomes. We do so using data from the 2004 Survey of Consumer Finances, focusing on households that contain children and have income of below $50,000 (the effective income cap for Pell eligibility). Among all such households, the 50th percentile of non-retirement financial assets is below $1000 and the 95th percentile is below $40,000.[27] The analogous figures for dependent Pell recipients in NPSAS are $200 and $31,000.[28]

These figures indicate that the assets of households currently applying for aid are quite similar to the population that could apply for aid. These statistics offer no support for the fear that a substantial, hidden population of low-income, high-asset families will gain Pell eligibility if assets are completely removed from taxation. This is not to say that there *no* such families will gain eligibility: 0.25 percent of families with income in the Pell range have more than $250,000 in non-retirement financial assets. But this is a minute portion of the population, and so the program costs of "wrongly" giving Pells to such asset-rich, income-poor families are low. By contrast, the resulting reduction in compliance costs is large once it is aggregated across the other 99.75 percent of households.

[FIGURE 3 ABOUT HERE]

Approach C: Distribute Aid Using Income and Family Structure, Dropping All Assets and Dependent Students' Earnings

The aid system's treatment of student earnings is deeply flawed, from both an equity and efficiency standpoint. The aid formula taxes student earnings (over an income protection

[27] Authors' calculations from the 2004 Survey of Consumer Finances. Figure is for households with children and incomes below $50,000.The 99th percentile of financial, non-retirement assets for this population is roughly $160,000.

[28] The 99th percentiles of non-retirement financial assets for dependent and independent Pell recipients are $95,000 and $13,000, respectively.

allowance of $2,550) at a rate of fifty percent. [29] Variation in students' earnings is driven predominantly by work hours, rather than variation in hourly wages. As a result, this is a tax on students' work effort, and may serve to discourage work. Further, the tax falls more heavily on low-income households, since both student work effort and earnings are drop as parental income rises. While 73 percent of dependent students from lower-income families have positive earnings, the figure is 62 percent for students from upper-income families.[30] Median student earnings are $2,730 for the lower-income group, as compared to $2,231 for the upper income group.

We therefore next exclude dependent students' earnings from the calculation of aid, and limit the required data items to parents' income, parents' marital status, family size, and number of family members in college. The Pell Grants of seventy-two percent of aid applicants are essentially unchanged; the correlation of this simulated Pell grant with the current Pell grant is 0.88. In Figure 4, we plot the associated changes in Pell Grant eligibility against income. Pell Grants increase most for those whose parents earn between $15,000 and $40,000 per year.

Since discarding dependent students' earnings mechanically increases calculated need, three times as many applicants would see a significant increase ($500 or more) in Pell eligibility as would see a significant decrease. As a result, this the most expensive approach so far discussed, with average Pell Grants increasing by $185 per applicant (11.5 percent); grants change only for dependent students (for independent students, approaches B and C are equivalent).

[FIGURE 4 ABOUT HERE]

[29] In 2007-2008, the disregard will rise to $3,000 and the tax rate will fall to 35 percent. Students also receive allowances for federal taxes paid and an estimate of state taxes paid. If parents' total allowances exceed parents' income, the excess parents' allowance is used to protect more of the student's income.
[30] We divide families at the rough median of household income, $50,000.

Summary of Results

In this section, we have exhaustively demonstrated that the progressivity of the federal aid system *does not* require its current complexity. The length of the FAFSA, and the number of data items used in the aid formula, could be massively reduced without changing the progressivity of the Pell or increasing program costs (Simulation A and B). An even more radical reduction in complexity can be achieved with a small increase in program costs (Simulation C). The three approaches described thus far simply drop particular items while keeping the formula itself unchanged. This means that dropping items such as assets or student earnings mechanically increase the cost of the program. But the formula itself could also be modified to enhance clarity and preserve cost-neutrality. In the next section, we describe a policy that radically simplifies financial aid in exactly this way.

The Feasibility of Delivering Student Aid Through the Tax System

We have shown that the formula for calculating Pell Grants could be drastically simplified with little effect on total program costs or the distribution of aid. But changing the formula without changing the overall process for accessing aid is unlikely to substantially reduce the complexity, confusion, and uncertainty faced by students and their families. In this section we describe how Pell Grants could be combined with the existing Hope and Lifetime Learning tax credits to form a single, streamlined credit.[31] We preserve the level and distribution of benefits by creating a new grant that is roughly the sum of Pell, Hope and Lifetime Learning eligibility by income class. We describe how delivery of the credit could be improved to enable families to better predict their eligibility and to receive funds at the time of actual college

[31] Although our initial focus was on simplifying the Pell Grant, if the Pell Grant were simplified enough to run through the tax system, it seems natural to further simplify by combining these grants with the existing tax benefits for higher education.

enrollment, rather than several months later. Economic theory and our own empirical analysis suggest that this program could be much more efficient and effective than the jumble of grants and tax incentives currently in place.

Eligibility: A sample grant table is shown below. The grant amounts listed in the table roughly reflect the sum of the current Pell Grant, Hope and Lifetime Learning credit eligibility for each income category. The table is small enough to fit on a postcard and be prominently displayed on posters in high school hallways. Note that subsidized student loan eligibility could be assigned using the same table, with eligibility either dependent upon income or set as a flat amount for all students.

Exhibit 1. Federal Student Aid, on a Postcard

How much federal aid can I get to help pay for college?

If your parents' adjusted gross income is…	then your grant is…
$0-$14,999	$4,500
$15,000-$19,999	$4,250
$20,000-$24,999	$3,750
$25,000-$29,999	$3,250
$30,000-$34,999	$2,650
$35,000-$39,999	$2,100
$40,000-$44,999	$1,475
$45,000-$49,999	$1,175
$50,000 -$59,999	$1,000
$60,000 -$74,999	$750
$75,000 -$99,999	$500
$100,000 or higher	$0

*If you are legally independent from your parents, your aid will be based on your (and your spouse's) income.

Application Process: Families could apply for the grant by checking off a box on their income tax return. In return, families would receive a voucher in the mail, to be applied towards the cost of attendance at any eligible higher education institution. Students would notify schools

of their grant eligibility as part of the normal application process. Schools would verify this information electronically with the Department of Education, as they do now with information from the Student Aid Report. Financial aid administrators would verify students' enrollment status for the Department of Education (grants will be prorated for part-time students).

Program Administration: While IRS has all the data needed to determine grant eligibility, it is the Department of Education that has the infrastructure in place to deliver funds to schools. The role of the IRS could thus be limited to forwarding applicants' adjusted gross income and dependency status to the Department of Education, which would calculate aid eligibility and send students their vouchers. Just as in the current system, eligibility for the 2006-07 school year would be based on 2005 income, as reported to the IRS in early 2006. Unlike the current system, students would not have to wait for their voucher to arrive to know exactly how much they will get, because they can look it up in the simple table (Exhibit 1).

Advantages

- *Simple and predictable*. The grant schedule is so simple that families can easily determine their eligibility themselves, before they file their taxes, and years before their child applies to college.

- *Less paperwork*. Families applying for aid will report their income to the IRS as they usually do, when they apply for taxes. They will not have to make a separate report to the Department of Education.

- *Families get funds when they need them.* Right now, the tax credits arrive up to 16 months after families have paid for college tuition. The credits do nothing for the strapped family who just can't come up with the funds for college. Our approach gets money into families' hands when they are paying the college bills.

- *One grant program.* Our approach combines the Pell and tax credits into a single, unified program. This reduces paperwork for families, cuts confusion about eligibility, and eliminates the byzantine rules that determine how tax credit eligibility changes when aid rises and vice versa.

Costs of Aid Simplification

Our goal is to increase the efficacy of the aid dollars we currently offer. The grant program just described is *revenue-neutral* if there is zero behavioral response (as is typically assumed in budget forecasts). That is, if people go to college and apply for aid at the rate they do now, then this program would be no more expensive than the sum of current program spending. Current spending on the Pell is now $13 billion, while for the tax credits it is $6 billion. The cost of our unified grant is therefore about $19 billion.

Current spending levels reflect a current take-up rate of 65 percent in the Pell Grant program.[32] If 100 percent of those eligible for the Pell took advantage of it, the program's cost would rise to $20 billion from its current $13 billion. To put it differently, costs are kept artificially low in the Pell Grant program by its extremely onerous application requirements. This is one method for rationing scarce funds, but a highly regressive method. The cost of aid application, we have argued and shown, is highest for the very populations we putatively target with need-based aid. We have therefore proposed a vast simplification of the aid system, one that we hope would lead *all* eligible students to step up and receive their grant. If they did so, our proposed grant would not be revenue-neutral, but instead would rise to about $26 billion.[33]

[32] We obtain this take-up rate by calculating Pell eligibility for all students in the NPSAS, not just those who fill out the FAFSA (NPSAS provides an estimated EFC for these students, which we use in the calculation). We compare this Pell eligibility to actual Pell receipt. We find that 58 percent of eligible students take up the Pell, while 65 percent of Pell dollars offered are taken up (that is, the Pell grants left on the table are relatively small). Others have estimated similar Pell takeup rates (American Council on Education, 2004).

[33] We estimate the costs of 100 percent take-up of our proposal using data from the October 2003 Current Population Survey. This survey provides nationally-representative estimates of the number of full- and part-time college students in each family income category. We multiply grant eligibility in each income category by the number of "full-time equivalent" students in each category, and sum to reach the $26 billion estimate.

A Note on Loans

The grants proposed are sufficient to cover tuition at community colleges and at many public universities. They would not cover living expenses, or tuition at the more expense public universities. As is the case now, loans would be necessary to cover the shortfall. We chose to focus the paper on grants, to emphasize the point that existing grants and tax credits could be distributed simply with no negative impact on progressivity. We can easily apply the same concepts and analysis to subsidized Stafford loans, and assign them based on income alone.

In an ideal world, we would pair the simplified grant discussed in this paper with a generous, income-contingent loan program similar to those operating in Australia, New Zealand and the UK (Chapman, __; Barr,__). In these programs, former college students repay their loans as a percentage of their payroll earnings. This "forward-looking" needs-analysis approach has good distributional characteristics: the beneficiaries of college pay for its costs, but they are insured against bad labor market draws that would saddle them with unsustainable loan payments.[34]

Barriers to Aid Simplification

Aid simplification produces winners and losers. Losers are inevitable when simplification is constrained by revenue neutrality, as noted by the Final Report of the President's Commission on Tax Reform. The only way to simplify and keep everybody whole is to increase spending.

Even producing winners can cause political problems. Winners are those whose estimated ability to pay drops when we shift to a simpler measurement of income. By implication, many

[34] We have costed out such a program, and generated the required "tax" tables. We found that the discussion of these results was muddying and lengthening the paper, and so cut them out. We are happy to discuss folding them back in.

families who do not currently "deserve" aid will get it under a simplified system. Some will perceive the receipt of aid by such students as fraud, or evasion, or a policy failure. We perceive it as a cost of simplification, outweighed by the benefits it confers on the vast majority of students but especially upon the student teetering on the margin of entering college.

While the political barriers to aid simplification are substantial, the bureaucratic barriers may be even greater. Over the years, Congress has passed several provisions aimed at simplifying the aid formula. In 1986, Congress mandated an "automatic zero" EFC for families with taxable income below $15,000 who are also eligible to file an IRS Form 1040A or 1040EZ. These applicants can potentially skip more than 50 of the over 70 financial questions on the FAFSA. Congress also mandated a "simplified needs test" for families earning less than $50,000 who are eligible to file the 1040A or 1040EZ; for these families, asset information can be disregarded.

While laudable in intent, these efforts have been ineffectual. As implemented, these simplifications have had virtually no impact on the aid system *as it is experienced by students and parents*. In our sample, just half of applicants from families with income between $5,000 and $15,000 had their applications processed using the automatic-zero EFC or simplified needs test. Even among the applicants whose FAFSAs were flagged as having received this simplified treatment, the evidence indicates that the *student's* application experience was not simplified. Among those who had their FAFSA processed using the simplified needs test, and who were eligible to skip the asset questions, 48 percent provided asset information. Among those who had their application processed under the automatic-zero EFC formula, 90 percent had responded to questions that they were not required to answer. For example, 63 percent had non-zero amounts reported in Worksheet A and 30 percent reported non-zero assets.

In effect, simplification has only made things easier for the computer that processes aid applications. Simplifications are not communicated to students and their families; they are never mentioned on the paper FAFSA, used by about half of dependent, undergraduate applicants with incomes below $50,000.[35] Even the online FAFSA only offers the option to skip the relevant questions mid-application, and then warns that some schools may require that the questions be answered (U.S. Department of Education, 2005c). This phrasing will frighten many students into filling in the complete application.

An additional barrier to simplification has been the states, who run their own aid programs. Thirty-two states have rejected the federal simplifications, requiring the full FAFSA data from applicants; in these cases, applicants using the web FAFSA never see a window that allows them to skip questions. This imposes large compliance costs for all applicants in order to distribute small amounts of aid to a few students. In half of the states, need-based grants average less than $200 per undergraduate (National Association of State Student Gant and Aid Programs, 2005). By comparison, Pell Grants average $1,100 in our sample of dependent undergraduates.

It is with this history in mind that we have proposed the whole-system reform described above. Instructions to the Department of Education to simplify the aid process have proved futile. Congressional action, and not agency reforms, will be needed to implement our proposal.

Conclusion

There is no doubt that the need-based aid system gets grants and loans to many low-income families who would be worse off without it. There is little to no evidence that this aid has the behavioral effect it is intended to have: getting more young people into college. In this

[35] Authors' calculations from NPSAS:04.

paper, we have described a radical simplification to the aid system that would preserve its distributional intent while enhancing its positive impact on schooling decisions.

We find that provisions intended to precisely target aid to those with the lowest ability to pay unintentionally produce regressive compliance costs. Behavioral economics suggests that minor differences in program design can have profound impacts upon the equity and efficiency of student aid. We identify multiple aspects of the aid system that behavioral economics suggest will blunt its impact upon schooling decisions.

The basics of need-determination have changed little since they were laid out fifty years ago. At a College Board conference in 1953, John Monro, then-dean of admissions at Harvard College, described to his colleagues at other elite colleges the formula he had been using to distribute aid to Harvard admits. The assembled college administrators were eager to establish a common formula for assigning aid, so that they could quash the competitive bidding for the best students that that had recently developed. Within a year, a common aid application was in use (the Parents' Confidential Statement) and the new College Scholarship Service (CSS) had been established by 94 charter members (Duffy and Goldberg, 1998; Wilkinson, 2005).

Then, as now, Harvard and other elite schools sought exhaustive measures of wealth and income to tailor their scholarships.[36] Today's FAFSA and aid formula reflect this peculiar history, providing extremely fine measures of ability to pay at levels of income that far exceed the effective cutoffs for federal aid. While these distinctions are critical at institutions that provide need-based grants to families with incomes well above $100,000 (Dynarski, 2004b), we have shown such fine measures are irrelevant for the distribution of Pell Grants.

The U.S. system for subsidizing college students hides information about the affordability of college behind a thicket of paperwork. It delays sharing information about the

[36] Until 1973, the aid application asked about make and model of the family car (Wilkinson, 2005).

affordability of college until it is too late. It is time for the federal aid system to uncouple itself from the needs of the Harvards, and concentrate on the needs of young people unnecessarily dissuaded from college by the impression that it is not affordable.

References

Advisory Committee on Student Financial Assistance. "The Student Aid Gauntlet: Making Access to College Simple and Certain: Final Report of the Special Study of Simplification of Need Analysis and Application for Title IV Aid." Washington, D.C.: Advisory Committee on Student Financial Assistance (January 23, 2005). URL: http://www.ed.gov/about/bdscomm/list/acsfa/edlite-gauntlet.html

Akerlof, George A. "The Economics of 'Tagging' as Applied to the Optimal Income Tax, Welfare Programs, and Manpower Planning." *American Economic Review* 68, no. 1 (March 1978): 8-19.

American Council on Education (2004). *Missed Opportunities: Students Who Do Not Apply for Financial Aid.*

Avery, Christopher and Thomas J. Kane. "Student Perceptions of College Opportunities: The Boston COACH Program." In *College Choices: The Economics of Where to Go, When to Go, and How To Pay for It*, edited by Caroline Hoxby, 355-394. Chicago: University of Chicago Press, 2004.

Bertrand, Marianne, Erzo F. P. Luttmer, and Sendhil Mullainathan. "Network Effects and Welfare Cultures." *Quarterly Journal of Economics* 115, no. 3 (August 2000): 1019-1055.

Bertrand, Marianne, Sendhil Mullainathan, and Eldar Shafir. "A Behavioral-Economics View of Poverty." *American Economic Review* 94, no. 2 (May 2004): 419-423.

Berube, Alan, Anne Kim, Benjamin Forman, and Megan Burns. "The Price of Paying Taxes: How Tax Preparation and Refund Loan Fees Erode the Benefits of the EITC." Washington, D.C.: Brookings Institution, Progressive Policy Institute Survey Series (May 2002). URL: http://www.brookings.edu/metro/publications/berubekimeitcexsum.html.

Bettinger, Eric. "How Financial Aid Affects Persistence," In *College Choices: The Economics of Where to Go, When to Go, and How To Pay for It*, edited by Caroline Hoxby, 207-238. Chicago: University of Chicago Press, 2004.

Bitler, Marianne, Janet Currie and John Karl Scholz. "WIC Participation and Eligibility", *Journal of Human Resources, v38*, 2003, 1139-1179.

Blumenthal, Marsha and Joel Slemrod. “The Compliance Cost of the U.S. Individual Income Tax System: A Second Look After Tax Reform.” *National Tax Journal* 45, no. 2 (June 1992): 185-202.

Brien, Michael J. and Christopher A. Swann. "Prenatal WIC Participation and Infant Health: Selection and Maternal Fixed Effects." University of Virginia Dept. of Economics, unpublished manuscript, 1999.

College Board. *Trends in College Pricing 2005*. New York: College Board Publications, 2005b.

College Board. *Trends in Student Aid 2005*. New York: College Board Publications, 2005a.

Currie, Janet. “The take up of social benefits.” NBER Working Paper No. 10488. Cambridge, MA: National Bureau of Economic Research (2004).

Duffy, Elizabeth and Idana Goldberg. Crafting *a Class: College Admissions and Financial Aid, 1955-1994*. Ewing, NJ: Princeton University Press, 1998.

Duflo, Esther, and Emmanuel Saez. “The Role of Information and Social Interactions in Retirement Plan Decisions: Evidence from a Randomized Experiment.” *Quarterly Journal of Economics* 118 No. 3 (August, 2003): 815-842.

Dynarski, Susan M. “Hope for Whom? Financial Aid for the Middle Class and Its Impact on College Attendance.” *National Tax Journal* 53, no. 3 (Part 2 Sept. 2000): 629-661.

Dynarski, Susan M. “Does Aid Matter? Measuring the Effect of Student Aid on College Attendance and Completion.” *American Economic Review* 93, no. 1 (March 2003): 279-288.

Dynarski, Susan M. “The New Merit Aid.” In *College Choices: The Economics of Where to Go, When to Go, and How To Pay for It*, edited by Caroline Hoxby. Chicago: University of Chicago Press, 2004a.

Dynarski, Susan M. “Tax policy and education policy: Collision or coordination?” In *Tax Policy and the Economy*, edited by James M. Poterba. Cambridge, MA: MIT Press, 2004b.

Dynarski, Susan M. “Building the Stock of College-Educated Labor.” NBER Working Paper No. 11604 (September 2005).

Edlin, Aaron S. “Is College Financial Aid Equitable and Efficient?” *Journal of Economic Perspectives* 7, no. 2 (Spring 1993): 143-158.

Greenstein, Robert. "The Earned Income Tax Credit: Boosting Employment, Aiding the Working Poor." Washington, D.C.: Center for Budget and Policy Priorities (August 2005). URL: http://www.cbpp.org/7-19-05eic.htm

Hansen, W. Lee. "The Impact of Student Financial Aid on Access." In *The Crisis in Higher Education*, edited by Joseph Froomkin. New York: Academy of Political Science, 1983.

Henry, Gary, Steve Harkreader, Philo A. Hutcheson and Craig S. Gordon (1998). "Hope Longitudinal Study, First-Year Results." Unpublished manuscript, Georgia State University.

Kahneman, Daniel and Amos Tversky. *Choices, Values and Frames*. Cambridge, MA: Cambridge University Press, 2000.

Kane, Thomas J. "Rising Public College Tuition and College Entry: How Well Do Public Subsidies Promote Access to College?" NBER Working Paper 5164, 1995.

Kane, Thomas J. "A Quasi-Experimental Estimate of the Impact of Financial Aid on College-Going." National Bureau of Economic Research Working Paper 9703, 2003.

Kaplow, Louis. "Optimal Taxation with Costly Enforcement and Evasion." *Journal of Public Economics* 43, no. 2 (November 1990): 221-236.

Kaplow, Louis. "How Tax Complexity and Enforcement Affect the Equity and Efficiency of the Income Tax." *National Tax Journal* 49, no. 1 (March 1996): 135-150.

Liebman, Jeffrey. "The Impact of the Earned Income Tax Credit on Incentives and Income Distribution," *Tax Policy and the Economy No. 12* (1998).

Liebman, Jeffrey and Richard Zeckhauser. "Schmeduling." Harvard University, unpublished manuscript, 2004.

Long, Bridget Terry. 2004. "The Impact of Federal Tax Credits for Higher Education Expenses," in Caroline M. Hoxby, ed., *College Choices: The Economics of Where to Go, When to Go, and How To Pay for It*. Chicago: University of Chicago Press.

Madrian, Brigitte C. and Dennis F. Shea. "The Power of Suggestion: Inertia in 401(k) Participation and Savings Behavior." *Quarterly Journal of Economics* CXVI No. 4 (November 2001): 1149-1187.

Moffitt, Robert. "An Economic Model of Welfare Stigma." *American Economic Review* 73 No. 5 (December 1983): 1023-1035.

Mullainathan, Sendhil, and Richard H. Thaler. “Behavioral economics.” NBER Working Paper No. 7948. Cambridge, MA: National Bureau of Economic Research (2000).

National Association of State Student Grant and Aid Programs (NASSGAP). "35th Annual Survey Report on State-Sponsored Student Financial Aid: Academic Year 2003-2004." Washington, DC: National Association of State Student Grant and Aid Programs, 2005.

Nichols, Albert L., Richard J. Zeckhauser. “Targeting Transfers through Restrictions on Recipients.” *American Economic Review* 72, no. 2 (May 1982): 372-377.

O’Donoghue, Ted and Matthew Rabin. “Doing It Now or Later,” *The American Economic Review*, 89 #1, March 1999, 103-124.

President’s Advisory Panel on Federal Tax Reform. *Final Report of the President’s Advisory Panel on Federal Tax Reform.* Washington, D.C.: U.S. Government Printing Office, 2005. URL: http://www.taxreformpanel.gov/final-report/.

Samuelson, William and Richard Zeckhauser. “Status quo bias in decision making.” *Journal of Risk and Uncertainty* 1, Issue 1, March 1988: 7-59.

Seftor, Neil and Turner, Sarah. “Back to School: Federal Student Aid Policy and Adult College Enrollment.” *Journal of Human Resources 37:2* (2002): 336-352.

Stedman, J. B. *Federal Pell Grant Program of the Higher Education Act: Background and Reauthorization.* Congressional Research Service Report for Congress, Order Code RL31668 (2003).

Stoll, Adam, and Stedman, James B. *Federal Student Aid Need Analysis: Background and Selected Simplification Issues.* Congressional Research Service Report for Congress, Order Code 32083 (2004).

Thaler, Richard H. “Psychology and Savings Policies.” *American Economic Review* 84, no. 2 (May 1994): 186-192.

U.S. Department of Education. *Final Audit Report of the Student Financial Aid Application Verification Process.* Control Number ED-OIG/A06-A0020. Washington, DC: U.S. Department of Education, Office of the Inspector General (2002a). URL: http://www.ed.gov/about/offices/list/oig/auditreports/a06a0020.pdf.

U.S. Department of Education. *National Education Longitudinal Survey of 1988: Public-Use Data and Electronic Codebook, Base Year Through Fourth Follow-Up*. Washington, DC: National Center for Education Statistics (2002b).

U.S. Department of Education. *Year 2000 Performance Report and 2002 Program Annual Plan, Volume 2: Individual Programs: Student Financial Assistance.* Washington, DC: U.S. Department of Education, Office of Student Financial Assistance (2002c). (URL: http://www.ed.gov/pubs/AnnualPlan2002/rV170171-SFA-0412.pdf)

U.S. Department of Education. *2003-2004 Federal Student Aid Handbook*. Washington, DC: U.S. Department of Education, Office of Federal Student Aid (2003a). URL: http://ifap.ed.gov/IFAPWebApp/currentSFAHandbooksYearPag.jsp?p1=2003-2004&p2=c

U.S. Department of Education. *2003-2004 Free Application for Federal Student Aid.* Washington, DC: U.S. Department of Education, Office of Federal Student Aid (2003b).

U.S. Department of Education. "FY 2005 ED Budget Summary: Student Financial Assistance." Washington, DC: U.S. Department of Education (February 2, 2004). URL: http://www.ed.gov/about/overview/budget/budget05/summary/edlite-section2d.html#tables

U.S. Department of Education. *2003-2004 National Postsecondary Student Aid Survey: Restricted-Use Data and Electronic Codebook*. Washington, DC: National Center for Education Statistics (2005a).

U.S. Department of Education,. *2005-2006 Federal Student Aid Handbook*. Washington, DC: U.S. Department of Education, Office of Federal Student Aid (2005b). URL: http://ifap.ed.gov/IFAPWebApp/currentSFAHandbooksYearPag.jsp?p1=2005-2006&p2=c.

U.S. Department of Education. *2006-2007 FAFSA On the Web Screenshots*. Washington, DC: U.S. Department of Education, Office of Federal Student Aid (2005c). (October 2005). URL: http://ifap.ed.gov/eannouncements/1025fotwscreenshot0607.html.

U.S. Department of Education. *Draft Student Aid Report 2006-2007* Washington, DC: U.S. Department of Education, Office of Federal Student Aid (2005d). URL: http://ifap.ed.gov/sarmaterials/attachments/0607DraftSAR.pdf

U.S. Department of Education. *2006-2007 Free Application for Federal Student Aid.* Washington, DC: U.S. Department of Education, Office of Federal Student Aid (2006).

U.S. Office of Management and Budget. *Budget of the United States Government, Fiscal Year 2005, Federal Credit Supplement*. Washington, D.C., 2005. (URL: http://www.whitehouse.gov/omb/budget/fy2005/)

Wilkinson, Rupert. *Aiding Students, Buying Students*. Nashville, TN: Vanderbilt University Press, 2005.

Appendix

Data

Student aid statistics and simulations are based on restricted-use, individual-level data from the nationally representative 2003-04 National Postsecondary Student Aid Survey (NPSAS:04). NPSAS:04 includes data from the Free Application for Federal Student Aid (FAFSA) for 56,440 undergraduate federal aid applicants. We limited our sample to 26,156 full-time undergraduates (dependent or independent) who attended the same institution for the full year. From this sample we drop 1,733 individuals who were missing an EFC, as well as 170 individuals missing other critical data elements such as income or family size. This results in a final sample of 24,253 individuals.

Aid Formula

To replicate the student's Pell eligibility, as well as to test the consequences of formula simplification, we coded EFC, Pell, and Stafford loan formulas and rules for dependent students as outlined in the 960-page *2003-2004 Federal Student Aid Handbook*.

The EFC formula sums parents' adjusted gross income (or W-2 earnings for non-tax-filers) and other income, subtracts a number of allowances (of which the largest is the amount of taxes paid), and adds in 12 percent of assets over an asset protection threshold that depends on marital status and elder parent's age. Marginal assessment rates from 22 to 47 percent are applied to this total (called parents' "adjusted available income"). The result is divided by the number of children in college to obtain the parents' expected contribution. The student's expected contribution is computed by adding student's adjusted gross income and other income, subtracting a few allowances, and applying a 50 percent assessment rate. 35 percent of any student assets are added to this figure to yield the student's expected contribution (students have no asset protection allowance).

The Pell award is estimated by subtracting the EFC from the maximum Pell Grant ($4,050). Following federal rules, grants between zero and $199 are rounded down to zero and grants between $200 and $399 are rounded up to the minimum grant of $400. Pell Grants over $2,700 are adjusted downwards for students at very low-tuition institutions (tuition and fees less than $675, in 2003-2004) using what is called the "tuition sensitivity adjustment." Pell Grants are also reduced if the calculated amount exceeds the cost of attendance at the student's institution (which is provided in NPSAS, as reported by the schools). In our sample, the tuition sensitivity adjustment applied to only 35 people and the cost of attendance adjustment applied to none.

Figure 1. The Student Aid Application Process

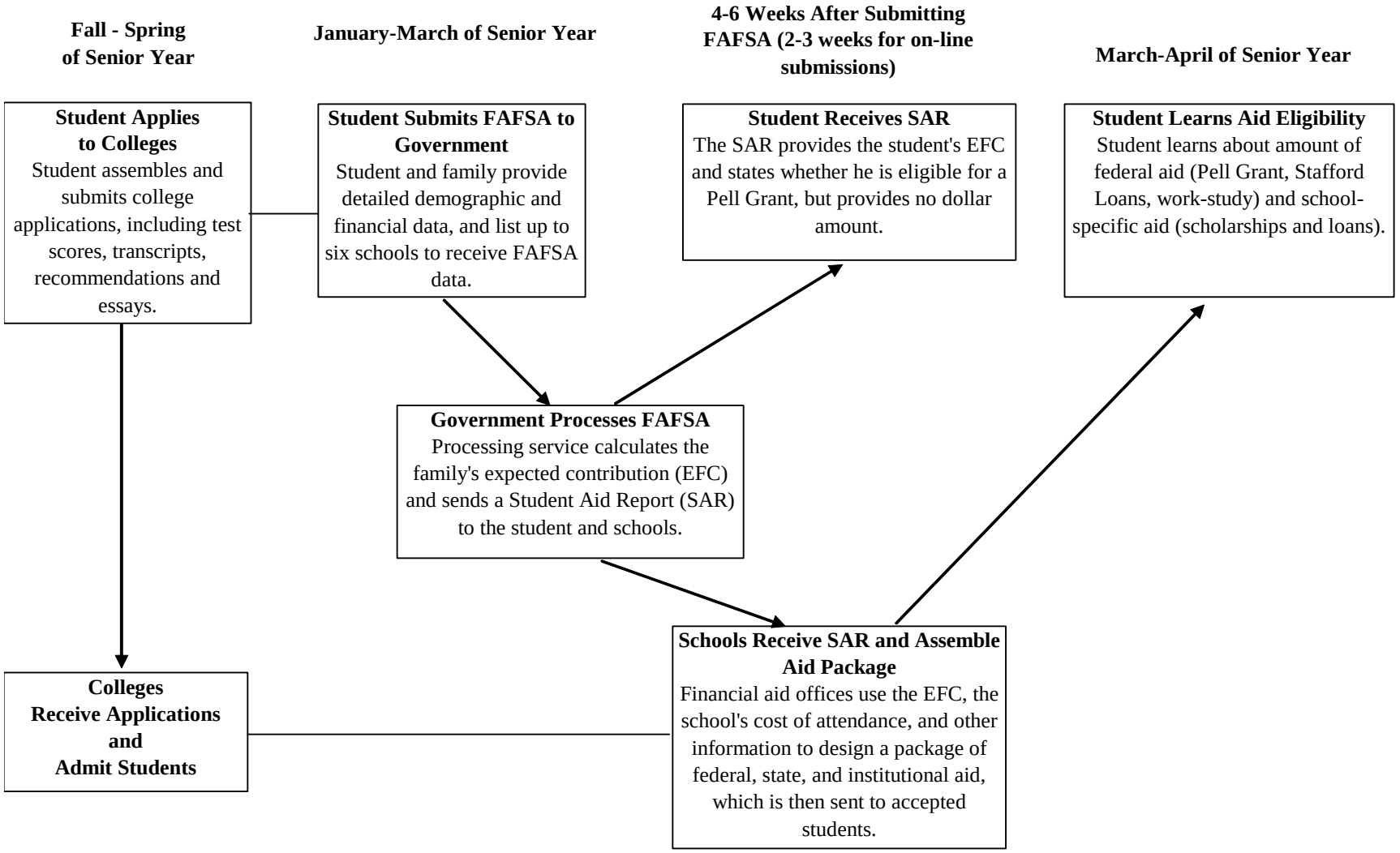


Table 1. Complexity of the FAFSA Versus IRS 1040

Measure	1040 2005	1040A 2005	1040EZ 2005	FAFSA 2006-2007
Number of pages (excluding instructions)	2	2	1	5
Total number of questions	118	83	37	127
Non-financial items				
Identifying information	6	6	6	22
Demographic/family information	8	8	2	18
Enrollment status/school info.	0	0	0	7
Signature and preparer info.	12	12	12	8
Other	1	1	1	10
Financial items				
Earned income	1	1	1	5
Other income	19	12	2	33
Assets	0	0	0	6
Deductions/credits/allowances	39	22	2	12
Tax amounts from tables, calc. lines	21	12	6	6
Withholdings, refund prefs.	11	9	5	0
Number of items required for computation of tax/refund or aid amt.*	71	43	8	72
Length of signing statement	49 words	64 words	59 words	232 words
Official estimate of time to prepare**	16 hours	13 hours	8 hours	1 hour

Source: Authors' counts unless otherwise noted. Counts for the FAFSA are for dependent students with two parents, and includes questions on required student and parent worksheets. Total number of questions includes subquestions and non-numbered questions, and ensures that items such as name and address are counted in the same way on both IRS and FAFSA forms.

*For the FAFSA, this excludes items required only to determine dependency status or general eligibility for federal aid.

**Estimates from official Paperwork Reduction Act notices in the instructions accompanying each form. IRS-reported estimates of time and cost of preparation are based on non-business filers who self-prepare without tax preparation software (these estimates can be found in each form's instructions, on page 78, 58, and 23, respectively). The FAFSA estimate can be found on page 7 of the FAFSA.

Table 2. Consequences of Aid Simplification

	Baseline	Approach A *Drops taxes paid, type of tax form, and worksheets*	Approach B *Additionally drops assets*	Approach C *Additionally drops dependent students' earnings*
Percent of all full-time full-year applicants whose Pell…				
...remains the same (within $100)	1.00	0.76	0.75	0.72
...increases by $500 or more	0.00	0.05	0.07	0.12
...decreases by $500 or more	0.00	0.07	0.06	0.04
Correlation between new and old Pell Grant	1.00	0.96	0.95	0.92
R-squared	1.00	0.92	0.90	0.84
Change in average Pell (per full-time full-year applicant)	0.00	-13.61	53.79	185.17
Percentage change in total program costs*	0.00	-0.84%	3.34%	11.48%
Variables included in simulation:				
Assets	Y	Y		
Dependent students' AGI	Y	Y	Y	
Parental AGI, or independent student/spouse's AGI	Y	Y	Y	Y
Parental or independent students' marital status	Y	Y	Y	Y
Family size	Y	Y	Y	Y
Number of family members in coll.	Y	Y	Y	Y
Number of FAFSA items required for simulation**	72	14	8	6

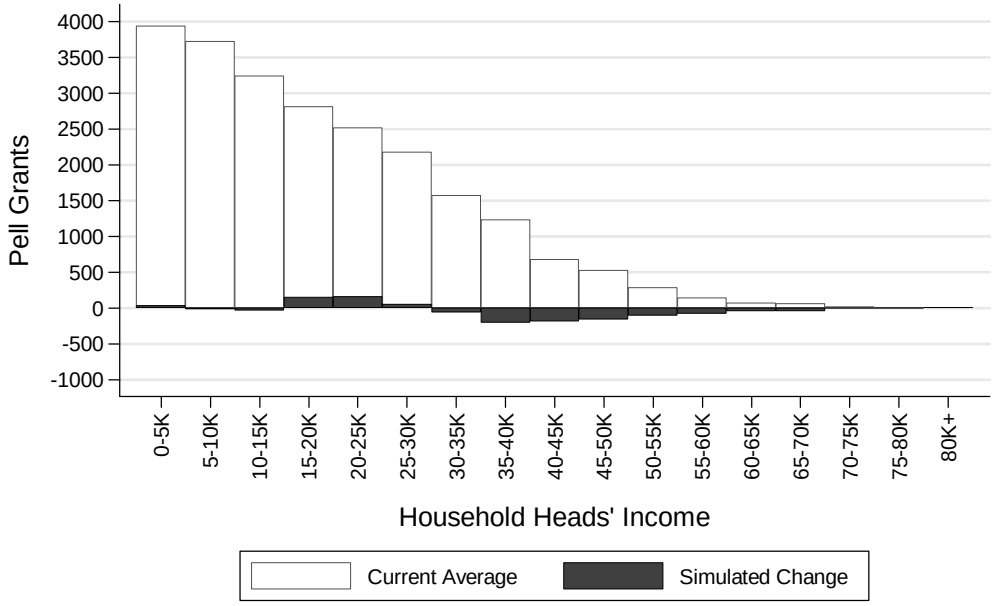
SOURCE: Authors' calculations using FAFSA data from NPSAS: 2003-2004. Sample is limited to 24,253 students (dependent or independent) who attended a single institution full time for the full school year and who were not missing key data elements such as income or actual EFC.

*Estimated total Pell expenditures for this sample of full-time, full year aid applicants are $7.6 billion. Total Pell expenditures across all applicants were $12.7 billion in 2003-04.

**Count refers to the number of questions on the 2003-2004 FAFSA required to elicit the items used in the simulated needs analysis. For example, eliciting AGI requires 3 questions on the FAFSA, because non-tax filers must report their earnings and their spouses' earnings. The count does not include questions used only to determine dependency status or questions unrelated to the calculation of need. The differences between the 2003-2004 and 2006-2007 FAFSA described in Table 1 are minor.

Figure 2.. (All FTFY)

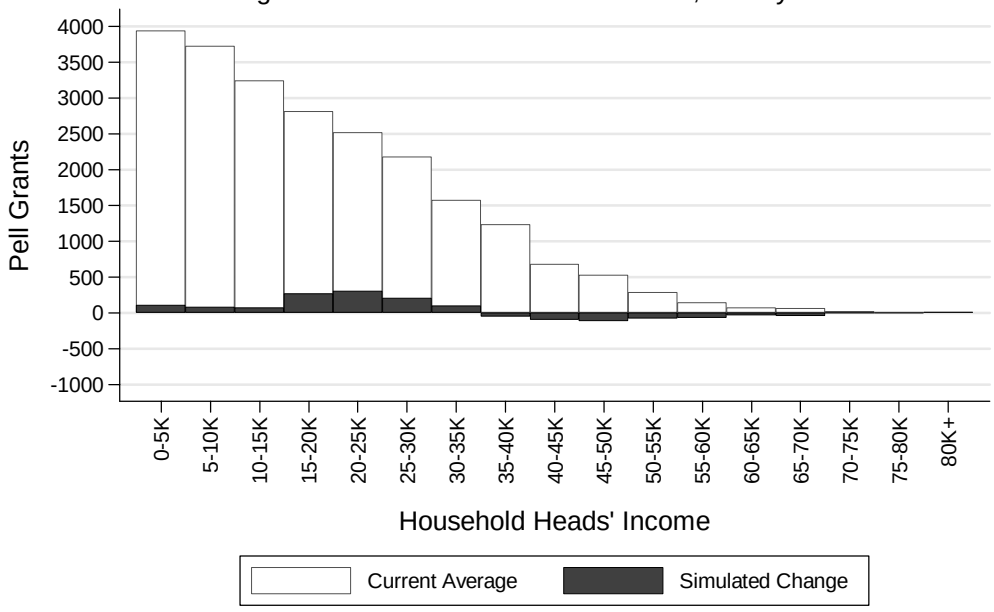
Using Income and Assets of Parents and Students, Family Structure



Note: Dollar amounts are in 2003-04$.

Figure 3 (All FTFY)

Using Income of Parents and/or Students, Family Structure



Note: Dollar amounts are in 2003-04$.

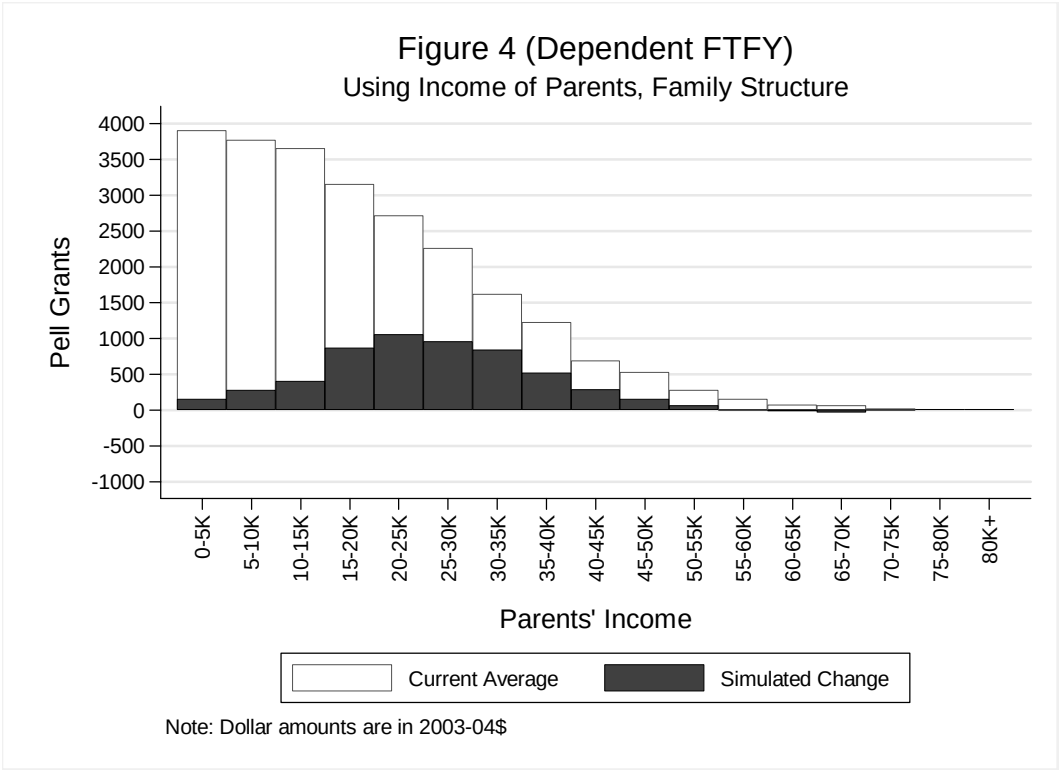


Figure 4 (Dependent FTFY)
Using Income of Parents, Family Structure
Pell Grants
4000
3500
3000
2500
2000
1500
1000
500
0
-500
-1000
0-5K
5-10K
10-15K
15-20K
20-25K
25-30K
30-35K
35-40K
40-45K
45-50K
50-55K
55-60K
60-65K
65-70K
70-75K
75-80K
80K+
Parents' Income
Current Average
Simulated Change
Note: Dollar amounts are in 2003-04$