Financial Aid: A Broken Bridge to College Access?

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In this article, Bridget Terry Long and Erin Riley argue that in recent years, U.S. financial aid policy has shifted its emphasis from expanding college access for low-income students toward defraying the costs for middle- and upper-income families. They explain how loans, merit-based aid, and education tax breaks are increasingly replacing need-based aid and discuss how the declining role of grants may disproportionately disadvantage students already underrepresented in higher education. They document the rise in students' unmet financial needs over the past decade, showing that low-income students and students of color are especially likely to face substantial unmet need even after taking into account all available grants and loans, as well as family contributions. In response to these trends, the authors call for a greater emphasis on need-based aid, especially grants, to reduce the role of cost as a barrier to college access.

Higher education plays an increasingly important role in helping individuals attain social and economic success. According to the U.S. Census Bureau, in 2004, individuals with a college degree earned 75 percent more than those with only a high school degree.[1] The monetary rewards of a college degree are so great that many in the field of higher education have begun to categorize the decision to attend college as the "Million Dollar Question" because, on average, people with a bachelor's degree will earn $1 million more over the course of their lifetimes than those with only a high school diploma. There are also many nonmonetary benefits associated with attending college, such as lower rates of government dependency and incarceration, better health, and higher levels of tolerance and charitable giving (Baum & Payea, 2004).

Harvard Educational Review Vol. 77 No. 1 Spring 2007

Unfortunately, the likelihood of attending college varies substantially by family income. Among high school graduates in 2004, only 43 percent of students from families who made less than $30,000 immediately entered a postsecondary institution. In contrast, 75 percent of students from families who made more than $50,000 did so.[2] Even after accounting for differences in academic preparation and achievement, substantial gaps in college access still exist by income level. Low-income high school graduates in the top academic quartile attended college only at the same rate as high-income high school graduates in the bottom quartile of achievement (Advisory Committee on Student Financial Assistance [ACSFA], 2001).

For those who matriculate, the likelihood of persisting to a college degree also differs greatly by income. Only 36 percent of low-income students who were college qualified[3] completed a bachelor's degree within eight years, while 81 percent of high-income students did so (Adelman, 2006). Stark differences also exist by race. Graduation rates at four-year institutions among first-time, full-time, degree-seeking undergraduates were highest for Asian/Pacific Islander students (65%), followed by White, non-Hispanic students (58%), for cohorts entering in the fall of 1998. Black and Hispanic students in this cohort graduated at much lower rates (40% and 46%, respectively; Knapp, Kelly-Reid, & Whitmore, 2006).

Although there are many barriers to college access and success for low-income and minority students, most can be grouped into three major categories. The first set of major barriers relates to cost. For the 2006–2007 school year, the average cost of tuition and fees at public four-year colleges and universities is $5,836, with average total charges amounting to $12,796 (College Board, 2006a). Without any financial aid, this total cost amounts to 24 percent of the median family income (U.S. Census Bureau, 2005).[4] Concerns about affordability are even greater at private four-year colleges and universities, which charge an average tuition of $22,218, or $30,367 with room and board (College Board, 2006a). The current situation is the result of skyrocketing prices over the last several decades: from 1976 to 2005, the average cost of a public four-year institution increased from $617 to $5,491 in nominal terms, or by 270% when adjusted for inflation (College Board, 2006a). Meanwhile, the median family income has not kept pace with growing tuition costs; income levels increased only 23 percent in real terms during the same period (U.S. Census Bureau, 2005).[5] Such trends led the federal Commission on the Future of Higher Education (2006), which was appointed by Secretary of Education Margaret Spellings, to conclude, "There is no issue that worries the American public more about higher education than the soaring cost of attending college" (p. 19).

A second major set of barriers to college enrollment and persistence is academic preparation. Students are increasingly finishing high school with less than grade-level competency, which has affected their ability to access and succeed in higher education. Greene and Foster (2003) estimate that only 32

percent of all students leave high school ready to study college-level material. The proportion that is academically prepared for higher education is even smaller among Black and Hispanic students (20% and 16%, respectively).[6] There are also significant gaps in test scores by background (Jencks & Phillips, 1998). For example, students from families earning $20,000 to $30,000 per year scored 474 on average on the math SAT, while students from families making more than $100,000 had a mean score of 564 (College Board, 2006b). Therefore, while academic preparation is a problem for many students, it is a problem that especially affects low-income and minority students.

While many underprepared students do not attempt to go to college, those who do enroll encounter significant barriers. The most common institutional response to underpreparation is placement in remedial or developmental courses. In 2001, colleges required nearly one-third of first-year students to take remedial courses in reading, writing, or mathematics (National Center for Education Statistics [NCES], 2003). Moreover, there is some evidence that the proportion of students in need of college remediation is growing.[7] Although there is little evidence on the effects of remediation on student outcomes, one study has suggested that the courses have a positive impact on persistence and achievement (Bettinger & Long, 2006).[8] However, trends suggest that many states and their public higher education systems are moving toward concentrating all remediation within their community college systems (Bettinger & Long, in press). Because students who begin higher education in two-year institutions are less likely to earn bachelor's degrees than those who begin in four-year institutions, this trend is likely to reduce access and persistence toward a bachelor's degree. In addition, there has been a general increase in admissions standards at many institutions to screen out less-prepared students. In some cases, academic deficiencies are so severe that colleges choose to expel the students rather than remediate them. This was the case in the fall of 2001, when the California State University system "kicked out more than 2,200 students — nearly 7 percent of the freshman class — for failing to master basic English and math skills" (Trounson, 2002, p. B1).

The third major impediment to higher education for many students, particularly those from low-income families, is the complexity of the college admissions process and financial aid systems, as well as a lack of accurate information about higher education costs. College attendance is the culmination of a series of steps and benchmarks, and this current landscape is too complex and difficult for many families to decipher and navigate. First, students must aspire to attend college or derive aspirations from their parents, teachers, and/or mentors. Additionally, students must prepare academically for college by taking the proper classes and getting a sufficiently high grade point average, particularly if they wish to attend a selective school. To gain entry into a four-year college, students must also register for a college admissions exam (i.e., the SAT or ACT). Finally, students must fulfill the requirements for high school graduation. Research by Kane and Avery (2004)

has shown that low-income high school students have little understanding of how to handle this admissions process or knowledge about actual college tuition levels. Other work has also found a significant lack of information among prospective college students in general (Horn, Chen, & Chapman, 2003; Ikenberry & Hartle, 1998).

Another part of the problem is the complexity of the financial aid system. To determine eligibility, students and their families must fill out the Free Application for Federal Student Aid (FAFSA), a detailed eight-page form containing over a hundred items. Not surprisingly, students and their families are often confused and even deterred by the form (ACSFA, 2005). An American Council on Education study found that 850,000 students who would have been eligible for federal financial aid in 2000 did not complete the necessary forms to receive such aid (King, 2004). The Commission on the Future of Higher Education (2006) recently acknowledged problems with the current aid process by concluding that some students "don't enter college because of inadequate information and rising costs, combined with a confusing financial aid system" (p. 7). Therefore, while cost and academic preparation are important hurdles for students, the role of information is also substantial in determining college access and persistence.

The remainder of this paper will focus on the first major set of barriers, college costs, and the effectiveness of current financial aid policy in addressing concerns about affordability. Many perceive cost to be the largest hurdle for students because, as noted above, gaps in attendance exist by income level even among those who are academically prepared to attend college. With a growing number of students graduating from high school, the changing demographics of the country, and the increasingly important role of education in society, this is a critical time to consider how to make financial aid policy more effective. Grant programs that have traditionally addressed issues of financial need have not kept pace with growing tuition costs. Meanwhile, the growing use of loans and the resulting debt burden students face have begun to reach alarming levels. To better understand these trends, we examine the net prices students face and discuss their current unmet financial needs. The analysis suggests the need for additional financial aid resources to support access to and persistence in higher education. This is particularly important for certain groups, such as low-income students, as our analysis suggests that they have significant unmet financial need even after accounting for all grants and loans that are currently available. It is important to note that in addition to the direct effects aid can have on helping students meet college costs, financial aid may also indirectly affect the other two barriers. Students who believe college is affordable are more likely to prepare academically and seek out the information necessary to enroll in college. The indirect effects of aid on other major barriers to access should also be considered when determining the future direction of financial aid policy.

Does Financial Aid Currently Meet the Needs of Students?

The Basics of the Financial Aid System and Aid Programs

Applying for federal financial aid, and often for state and institutional aid, requires that a student complete the FAFSA. The FAFSA collects information on family income and assets in order to determine the Expected Family Contribution (EFC), the amount a family is estimated to be able to contribute to higher education expenses. Other information that affects this calculation is the size of the family, the number of family members in college, and the age of the oldest parent, as well as information on the student's earnings and assets. The EFC formula differs if the student is independent, meaning that they are age twenty-four or older, married, have legal dependents, are orphans, or have served in the Armed Forces. Because independent students may have their own dependents and are not expected to rely on parental contributions, the federal system does not expect independent students to contribute as much as the families of dependent students.

To calculate need, the government subtracts the EFC from the total cost of attendance.[9] A student's financial need, in combination with his or her EFC, determines whether he or she is eligible for certain grants and loans. One implication of determining need in this way is that two identical students will have different amounts of financial need, depending on which college each decides to attend. A student attending a private four-year university costing $40,000 per year would qualify for more need-based financial aid than a student with a similar family situation attending a public four-year university costing $10,000.

Students who have a low EFC *and* have financial need will be eligible for federal need-based aid, like a Pell Grant. The Pell Grant is the largest need-based aid program in the country and serves as the foundation for other aid. This means that if students are eligible, the Pell Grant is awarded first. The majority of Pell recipients come from families with incomes in the lowest economic quartile; families earning between $30,000 and $40,000 begin to be phased out of Pell eligibility. In 1999–2000, the median family income of Pell Grant recipients was $15,098, compared to $49,475 for ineligible undergraduates (King, 2003a). Students with financial need may also be eligible for Federal Work Study funds, which subsidize the wages of the students employed in on-campus jobs.

Students with higher EFCs usually will not qualify for Pell Grants or Work Study funds, but they are eligible for government loan programs. The federal government sponsors several major loan programs. The largest is the Federal Stafford Loan Program, which offers subsidized and unsubsidized loans. Interest on subsidized loans, available only to needy students as determined by the FAFSA, is paid by the government while the student is in college. During their first year of undergraduate education, students may receive up to $3,500;[10] the limit increases in subsequent years and is higher for indepen-

dent students. The Perkins Loan Program is another federal program, and it is distributed by campuses on the basis of financial need. Finally, the Federal PLUS Loan Program (Parent Loan for Undergraduate Students) is available to the parents of dependent college students. PLUS loans have no annual or aggregate limits, except that parents may not borrow more than the cost of attendance, net other financial aid. All of the federal loan programs require repayment after the student stops attending college, regardless of whether or not he or she has completed a degree.

In addition to grant, loan, and work-study programs, the federal government offers aid through the tax code. The Hope and Lifetime Learning Tax Credits provide a benefit to families who pay tuition expenses and incur tax liability. Relative to the Pell Grant, the higher education tax credits maintain a much higher level of income eligibility, phasing out at an adjusted gross income of $83,000 to $103,000 for joint filers, or $41,000 to $51,000 for single filers (Long, 2004). Additionally, there are a number of tax benefits for families who save for college, such as 529 Plans and Coverdell Savings Accounts. The government does not tax investment gains in these accounts if they are used to pay for tuition.

States are also deeply involved in providing financial aid to students. First, state governments provide large subsidies to public postsecondary institutions. These funds, amounting to $72.1 billion in 2007, enable public colleges and universities to charge in-state students a reduced price (Palmer, 2006). In addition, many states have financial aid programs. The largest need-based state grant programs are found in California, Illinois, Indiana, New Jersey, New York, Ohio, Pennsylvania, and Texas. Other states, such as Georgia, Florida, and Mississippi, focus their aid programs on merit-based criteria, such as reaching a certain grade point average in high school or earning a particular SAT score (National Association of State Student Grant and Aid Programs [NASSGAP], 2006). Institutional aid awarded by colleges and universities is also significant and has increased considerably during the past fifteen years. According to Horn and Peter (2003), the percentage of full-time undergraduates in public colleges who received institutional aid grew from 17 percent in 1992–1993 to 23 percent in 1999–2000, with the average award being $2,700. At private colleges and universities, 47 percent of students received institutional aid in 1992–1993, and this increased to 58 percent in 1999–2000, with the average award being $7,000.

While there are a myriad of financial aid programs aimed at helping families pay for college, as the following sections explain, recent trends in the design of aid policies may limit their impact on increasing college access for low-income students. Shifts in the foci of governmental and institutional financial aid programs have left the neediest students facing higher prices net financial aid. As a result, many question whether the current financial aid system is adequately addressing the concerns of the neediest families.

The Changing Focus of Financial Aid

Although billions of dollars are spent each year on financial aid, there are several reasons to believe current expenditures are insufficient. While Pell Grants constitute the primary federal need-based aid program, they have not maintained their value over time. In real terms, the maximum Pell Grant in 1975–1976 was $5,064; it was only $4,050 by 2005–2006, a 20 percent decrease after accounting for inflation (College Board, 2006c). This is a symptom of a larger change in financial aid policy. During the last fifteen years, aid priorities have shifted from increasing the access of low-income students to focusing on the affordability concerns of middle- and upper-class families. In 1992, federal financial need calculations began to exclude home equity, thereby allowing many more middle-class families to qualify for federal need-based support (Schenet, 1993). Then, with the introduction of the Georgia HOPE Scholarship (Helping Outstanding Students Educationally) in 1993, states began to promote merit-based aid programs, which research has shown to favor upper-class students (Cornwell, Mustard, & Sridhar, 2006; Dynarski, 2000). Although more money is allocated by states to need-based programs, spending on non-need-based grant aid grew 348 percent during the past decade, compared to 99 percent growth in need-based grant aid (NASSGAP, 2006)

The shift in focus to middle-class families continued in 1997, when the federal government created the higher education tax credits. As noted above, families must have tax liability to reap a benefit, and few families with incomes below $30,000 qualify due to this requirement. Most beneficiaries during the last three years have had family incomes over $50,000 (Long, 2004). The same is true of the benefits associated with college savings plans. Dynarski (2004), for example, found that 90 percent of families with a college savings plan had at least one family member with a college degree. Ma (2004) found that the median income among users of these plans was $100,000, far higher than the median income and median wealth among all families in the United States. Undoubtedly, college is a difficult expense for nearly every family to manage. However, the shift of financial aid policy toward merit-based programs and tax credits has been especially detrimental to students at the bottom of the income distribution.

At the same time, as governmental aid shifted to address affordability for upper-income families rather than the needs of low-income students, many institutions also shifted their foci from need to merit as part of enrollment-management strategies. During the 1990s, the proportion of institutional aid going to merit aid rose sharply (McPherson & Shapiro, 1998). The structure of institutional merit aid includes a range of preferential packages that vary from scholarships and grants based on standardized test scores to programs rewarding activities most likely to be found in affluent high schools. As the effects of merit aid continue to be debated, it is likely that institutional tuition discounting in the form of preferential packaging and merit aid has

decreased college access among those least able to afford higher education (Davis, 2003).

The Price Students Pay after Aid

Key to understanding the degree to which the current system meets the needs of students is determining the actual price they pay for college after financial aid. While information about rising college costs appears regularly in headlines, little information is circulated regarding the net price students actually face. According to federal data, among all students in 2003–2004, 26 percent of students received grant aid from the federal government, 18 percent received state grants, and 17 percent received institutional grants (Berkner, Wei, & Carroll, 2006). The proportion receiving grant aid is even higher among full-time students. Over one-third of full-time, full-year students who attended college in state received a federal grant averaging $3,300 (Berkner et al., 2006).

After taking into account the multiple sources of financial assistance, the price paid by students is much lower than the list prices in college catalogues. According to figures from the College Board, the average net price at a public four-year college was $2,700 in 2006–2007. This is defined as tuition, required fees, and room and board, minus the average grant aid and tax benefits received by full-time students. The net price of a private four-year college was $13,200 (College Board, 2006a). While net tuition prices are considerably lower on average than list price, it is important to keep in mind that these are only mean values. Net price can vary significantly among students, even within the same institution. Differences in net price may be based on differences in financial resources, family make-up, and student characteristics such as academic ability (College Board, 2006a). When investigating the practices of very selective private institutions, which tend to focus on need-based financial aid, Hill, Winston, and Boyd (2004) found that the net price students faced varied from an average of $7,495 for students from the lowest quintile of family income to $16,249 for students from families in the upper-middle quintile, and $23,399 for students in the highest income quintile.[11]

Although the costs faced by students are much less once grant aid is considered, the remaining costs that families must meet are often substantial. Students are increasingly turning to loans to make up this remaining difference. The next section details trends and debates surrounding student loans. It is important to bear in mind, however, that even after accounting for federal loans, the net price of higher education is still insurmountable for many students. Given the current gaps in college attendance by income and race even after accounting for academic preparation, there is reason to believe that the current set of financial aid policies is not completely effective in addressing the barrier of cost. Later in this article we will shed light on the remaining problem of unmet need.

Concern about the Growth of Student Loans

The Growing Use of Student Loans

Over the past fifteen years, loans have become increasingly prominent as a means of funding postsecondary education. This is especially true for full-time, full-year students. From 1989–1990 to 2003–2004, the percentage of full-time, full-year students with loans rose from 36 percent to 50 percent. Moreover, average annual loan amounts during this period grew 38 percent in constant 2003 dollars, from $4,486 to $6,200 (Long & Riley, in press).[12] In 2005–2006, the Federal Stafford Loan Program, the largest of the student loan programs, awarded over $57.4 billion in aid (College Board, 2006c). While 79 percent of loan volume is awarded by federal programs (Stafford, Perkins, and PLUS), private loan volume is also on the rise. Between 2000–2001 and 2005–2006, the amount given in private loans grew at an average rate of 27 percent per year after adjusting for inflation, amounting to $17.3 billion in 2005–2006 (College Board, 2006c).

It is important to realize that not all students turn to loans at the same rate or borrow equal amounts. Table 1 details how the use of loans differs by student characteristics. In 2003–2004, students attending college full time and for a full school year borrowed more, on average, than their part-time, partial-year counterparts and were more likely to borrow overall. For example, the average amount borrowed by a full-time, full-year student was $6,023, versus $5,621 for all students. Forty-seven percent of full-time, full-year students borrowed that year, compared to 31 percent of students overall.

The likelihood of borrowing also differs by income, institution type, and race. In 2003-2004, dependent students in the lowest half of the income distribution were more likely to borrow, as were students attending private four-year institutions (compared to public two- and four-year institutions) and Black students. In some cases, groups of students more likely to borrow also have larger average loan amounts, as is the case for private four-year students. However, while lower-income students and some minorities were more likely to borrow, they borrowed less on average than their peers, most likely due to attending less-expensive institutions.

Student Debt and Loan Burden

To better understand student debt, one must consider cumulative debt, or the amount students borrow over the course of earning their degree. This amount has grown substantially over time. According to analysis by Long and Riley (2007), between 1992–1993 and 2003–2004, cumulative debt accrued by second-year undergraduates at public two-year institutions increased an average of 169 percent, from $3,087 to $8,296, after accounting for inflation. Fourth-year undergraduates at public colleges faced cumulative debt amounts 76 percent higher over this period, accumulating an average of $17,507 in loans over four years by 2003–2004. Fourth-year undergraduates at private

TABLE 1 *Average Annual, Total Student Loans, 2003–2004*

	All Students		*Attended Full-Time/Full-Year*	
	Percent of Students Who Borrowed	*Average Loan (dollars)*	*Percent of Students Who Borrowed*	*Average Loan (dollars)*
All Students	31	5,621	47	6,023
By Type of Institution				
Private Four-Year	56	6,943	66	7,249
Public Four-Year	44	5,593	51	5,771
Public Two-Year	12	3,638	23	4,054
By Income Quartile (Dependent Students Only)				
Lowest	35	4,961	47	5,288
Lower Middle	40	5,177	50	5,550
Upper Middle	38	5,388	48	5,755
Highest	31	5,628	39	5,772
By Race or Ethnicity				
White	32	5,690	48	6,025
Black or African American	36	5,539	58	6,265
Hispanic or Latino	23	5,150	39	5,647
Asian	21	5,571	34	5,679
American Indian or Alaska Native	30	5,944	50	6,812

Source: Calculations by the authors using the National Center for Education Statistics, 2004 National Postsecondary Student Aid Survey (NPSAS) Data Analysis System (DAS), Online version 4.0. Accessed December 14, 2006.

Notes: The average loan amounts are only for those who took out a loan. Total amount of loans received during the 2003–2004 academic year represents loans from all sources, including federal, state, and institutional loans. It also includes private loans reported by the student, but it excludes PLUS loans made to parents. Sample weights were used to reflect the total population of undergraduates.

colleges in 2003–2004 borrowed an average cumulative amount of $21,946, a 57 percent increase over the ten-year period.

To further gauge whether loan levels are worrisome, one should examine indicators of a student's ability to pay back the debt. Debt burden, calculated as the percentage of monthly income a student must dedicate to loan payments, provides the best measure of whether rising loan amounts are problematic for students. In 2004, the American Council on Education concluded that the median debt burden of 7 percent was manageable and stable for students graduating with bachelor's degrees in the 1990s. However, the report

also found that one-third of borrowers faced debt burdens above 8 percent, a level considered unmanageable by financial aid researchers (American Council on Education, 2004).[13] Graduates' ability to manage loan debt can also be measured by default rates. Recent research suggests that default rates rise as cumulative debt increases. Choy and Li (2006) found that 20 percent of 1992–1993 borrowers with $15,000 or more in Stafford loans defaulted over a ten-year period, compared to 13 percent who borrowed $10,000 to $14,999, and 8 percent who borrowed between $5,000 and $9,999.

While research on debt levels suggests that they may have been manageable for most students a decade ago, the situation has probably changed for current students. Higher cumulative debts combined with recent changes in federal loan programs suggest that today's college students face even higher debt burdens, and these are likely to continue rising in the future. Most notably, the annual loan limits for first- and second-year students in the Stafford Loan Program have recently been increased for the first time in over a decade, and there is currently discussion of whether to raise the loan limits for undergraduate juniors and seniors (Field, 2007). Past research has documented significant increases in cumulative debt after loan limits were raised and borrowing restrictions were eased in the early 1990s (Schershchel, 1998). Furthermore, the move from a variable interest rate for Stafford loans to a fixed rate means future graduates may face higher interest rates than recent cohorts. Recent action has been taken to cut the interest rate on student loans, but the long-term implications of these rate cuts are unclear, and such cuts may do little to offset debt burdens if the total amount of student debt increases dramatically. Unless students encounter more favorable job opportunities — including higher salaries — loan burdens will almost certainly become unmanageable for many students in the future.

Debt burden is an especially troublesome issue for students who do not complete a college degree (Long & Ansel, 2007). Among students who began college in 1995 and borrowed money but later dropped out, the median debt was $7,000 (Gladieux & Perna, 2005). Students who dropped out of four-year programs accumulated a median debt of $10,000, while dropouts from two-year programs accumulated a median debt of $6,000. These amounts of debt are particularly difficult because although these students have incurred some of the costs of college, they are unable to reap the full benefits of a degree. Gladieux and Perna (2005) found that 22 percent of borrowers who dropped out of their degree programs defaulted on at least one loan within six years of originally enrolling in college, compared to only 2 percent of college graduates. Such a stark difference in default rates underscores the importance of degree completion and suggests that persistence is important in determining if a student is able to manage his or her debt. Sadly, the national six-year graduation rate for the cohort that began at a four-year college in the 1995–1996 academic year was only 57 percent, or 63 percent once transfers are taken into account (Berkner, He, & Cataldi, 2002). Moreover, research sug-

gests that persistence is related to unmet need: Students unable to cover their education expenses are less likely to persist. However, students are caught in a catch-22 — leaving school with significant debt before completing a degree is also not an appealing option.

The Negative Consequences of Debt

As loan use increases, especially in terms of the number of borrowers, it is hard to argue that loans are anything less than a necessity for many students to gain access to college. However, the increasing dependence on loans to make college attendance possible raises several sets of concerns. First, differences in the willingness to borrow may affect opportunities for postsecondary education. Financial aid administrators report anecdotally that students from traditionally disadvantaged backgrounds often are unwilling to incur substantial debt to attend college. This may be related to socioeconomic differences, as suggested by a 2003 report by the ECMC Group Foundation that investigated cultural barriers to debt incurrence. Using mortgage status as a proxy for a family's willingness to borrow, the report found that a higher percentage of students from households with a mortgage borrowed student loans, despite being wealthier on average (and likely better able to pay for college) than students from families who rent. While the findings suggest that socioeconomic differences play a role in student borrowing, more research is needed to understand how students and their families consider whether to take on debt. Such differences have important implications for college access and success, given that much financial aid policy now focuses on loans rather than grants.

A second set of concerns relates to the possible unintended negative consequences loans could have on student decisions. While many forms of financial aid, such as grants and scholarships, have little potential to impact educational decisions after they are awarded, it has been suggested that debt affects students' choice of major, deterring students from public service fields such as teaching and social work. According to the State Public Interest Research Groups' Higher Education Project, 23 percent of graduates from public institutions would face unmanageable debt burdens if they entered teaching, based on average starting salaries. Thirty-eight percent of graduates from private colleges and universities would encounter unmanageable debt as starting teachers. The prospects for students pursuing social work are even grimmer, with 37 percent and 54 percent of public and private college graduates, respectively, facing unmanageable debt (Swarthout, 2006). Taking this further, we examine the monthly loan payments a new teacher would face if graduating with an average cumulative debt. Assuming a standard ten-year repayment schedule, using the newly adopted fixed interest rate of 6.8 percent and taking the average 2003–2004 starting salary of $31,704 from the American Federation of Teachers (Nelson & Baldaro, 2005), a graduate with $17,507

in loans could expect a monthly payment of $201.47.[14] This represents 7.6 percent of pretax monthly income. A graduate from a private university with the average cumulative debt of a fourth-year undergraduate of $21,946 would face monthly payments of $252.56 under the same conditions, which amounts to 9.6 percent of monthly pre-tax earnings.

These scenarios may represent more favorable conditions than many students would actually encounter. As noted above, a growing number of students hold at least some loans from private sources in addition to federal debt, and these private loans generally carry higher interest rates. In addition, most students take more than four years to graduate, suggesting that cumulative debt levels based on four years of attendance underestimate the true total debt of a college graduate. Finally, these calculations only represent an average, so while 7.6 percent and 9.6 percent of income may be manageable for some students, students facing higher costs of living or lower-than-average salaries may struggle to manage their debt burden.

Additional concerns about the unintended consequences of student loans have been raised regarding their impact on life decisions after college, such as buying a house, getting married, or having children. Evidence is mixed, but research by Nellie Mae over the past fifteen years suggests that attitudes toward education debt are becoming more negative over time. Furthermore, while multivariate analysis of past surveys failed to find a relationship between homeownership and student debt (Baum & Saunders, 1998), the 2002 survey found that home ownership rates declined by 0.2 percentage points for every additional $1,000 in student loans.[15] In other words, for every additional $5,000 accumulated in student loans, a borrower's likelihood of owning a home decreased by 1 percent (Baum & O'Malley, 2006).

The Other Side of the Loan Debate

Despite mounting concerns about the negative consequences of loans and the resulting burden on borrowers, a competing argument is that some students do not have access to *enough* loans. Until the recent Higher Education Reconciliation Act, federal loan limits had not changed since the early 1990s. The failure of federal loan limits to increase in parallel with the rising cost of college, along with the high percentage of students borrowing at or near the maximum, is cited as evidence that students cannot borrow as much as they need. In 2003, 69 percent of all dependent undergraduate Stafford borrowers and 76 percent of first-year students met or exceeded the federal limit in total loans (King 2003b). In addition to students borrowing at the limits, the growth in private loans is also cited as evidence that students need access to additional loan sources (Wegmann, Cunningham, & Merisotis, 2003). Private loan usage at high-cost institutions, according to Redd (1999), is driven by students exceeding annual loan limits under federal programs. Though the subsidized Stafford Loan limit for undergraduate freshmen is increasing this

year from $2,625 to $3,500 (Burd, 2006), an increase of only $875 may *still* be inadequate to meet the needs of many students.

Growing debt and increased reliance on private loans may not be a major concern if these loans are being used to facilitate choice or a certain lifestyle. Finding that private loans help students attend their first-choice schools, researchers at the Institute for Higher Education Policy concluded that the demand for private loans is often a function of the high costs of attendance rather than low ability to pay (Wegmann et al., 2003). In other words, most private loans are taken out by students who choose to attend expensive institutions but would be able to afford less-expensive institutions without such loans. Moreover, Rube (2003) found that 75 percent of those taking private loans lack demonstrated financial need under the federal government's guidelines, and that 92 percent of dependent students borrowing from private sources come from families with incomes over $100,000. The fact that some students' loans may be taken out for convenience rather than necessity, as asserted by King (1999), makes the interpretation of current trends much more complicated.

Growing Unmet Financial Need

While grants and loans are helping students afford college with mixed results and implications, many students still do not have their financial needs met. Unmet need is a significant issue, as detailed by our analysis of the 2003–2004 National Postsecondary Student Aid Survey (NPSAS). The NPSAS is a comprehensive nationwide survey of current college students designed to determine how students and their families pay for postsecondary education.[16] Generally speaking, unmet need is defined as the educational cost minus the EFC and financial aid. Educational cost is defined as the total cost of attendance and is determined by the institution. This includes tuition, fees, and room and board, and it is adjusted according to whether the student attends full- or part-time, and for a full or partial school year.[17] As described above, the EFC takes into account a family's income and assets to determine the financial responsibility of the family.

To measure unmet need, we use two definitions that differ slightly in the types of financial aid that are included in the calculation. The first definition, unmet need after *all grants*, indicates the share of need that is unmet by aid that does not have to be repaid, including all grants, scholarships, and fellowships (excluding federal veterans' benefits and military aid) from all sources, including the government, institutions, and private organizations. The second definition, unmet need after *grants and loans*, accounts for all loans as well as aid that doesn't require repayment. This second definition indicates students' initial unmet need, as students are expected to contribute a portion of their education costs after leaving college, when they repay their loans.

Unmet Need after All Grants

Grant aid often covers only a small fraction of tuition and other college expenses for many families. As Table 2 shows, after accounting for the family's contribution (the EFC) and the receipt of all grants, dependent students in 2003–2004 faced an average unmet need of $7,195. For full-time, full-year students, this unmet need was even greater ($8,323). Unmet need also differed by type of institution attended. Full-time, full-year students at private colleges faced unmet need levels 53 percent higher than their peers at public four-year institutions. The unmet need of full-time, full-year students attending public two-year institutions was high as well. In 2003–2004, after grants from all sources, these students faced an average unmet need of $5,003.

It is particularly noteworthy that families at the lower end of the income distribution faced unmet need equal to that of students at the top of the income distribution. In other words, while a dependent student from a family in the top income quartile has greater resources than a dependent student from a family in the bottom income quartile, the student from the high-income family faced unmet costs very similar to those faced by a student from a low-income family ($7,258 versus $7,273, respectively). More importantly, focusing only on full-time, full-year students reveals that those in the bottom income quartile actually had *higher* levels of unmet need than students in the highest income quartile ($9,031 versus $7,566 for dependent students, and $10,259 versus $6,865 for all full-time, full-year students). Therefore, among students with similar attendance patterns, the problem of unmet need is heightened for those with lower family incomes. Regardless of enrollment pattern, nearly all low-income students had some unmet need after accounting for grants.

According to the 2003–2004 data, independent students faced a lower average unmet need after grant awards ($5,751 versus $7,195 for dependent students). This pattern is likely due to the fact that independent students tend to qualify for more aid, as noted above regarding the financial aid formula. In addition, independent and dependent students tend to enroll in college at different intensities, with independent students being much more likely to attend part-time and thus be charged less in tuition.

Unmet Need after All Grants and Loans

While grants represent the most generous type of financial aid because they do not need to be repaid, students are still left with a considerable amount of unmet need even after other forms of aid, such as loans, are taken into consideration. Table 3 presents the average unmet need after EFC and aid from all sources are subtracted from the student budget. In addition to grants, this includes loans and work study funds from federal, state, institutional, and private sources.[18] Dependent students face an average unmet need of $5,911, versus $4,503 for independent students. However, when all aid is taken into account, full-time, full-year independent students still face higher average unmet need than full-time, full-year dependents ($7,049 versus $6,726).

TABLE 2 *Average Unmet Need in Dollars and the Percentage of Students with Unmet Need after All Grants, 2003–2004*

	Dependent Students					*Independent Students*	
		Full-Time/Full-Year Only					
	All Dependent Students	*All Full-Time/ Full-Year*	*Private Four-Year*	*Public Four-Year*	*Public Two-Year*	*All Independent Students*	*All Full-Time/ Full-Year*
Overall	7,195 (60%)	8,323 (69%)	12,736 (81%)	7,159 (66%)	5,003 (63%)	5,751 (66%)	9,606 (92%)
By Income Quartile							
Lowest	7,273 (93%)	9,031 (97%)	14,479 (99%)	8,256 (97%)	5,962 (97%)	6,598 (98%)	10,259 (99%)
Lower Middle	7,280 (76%)	8,548 (92%)	14,314 (97%)	7,792 (94%)	4,635 (82%)	5,865 (85%)	9,696 (99%)
Upper Middle	6,895 (49%)	7,437 (63%)	11,862 (88%)	5,772 (62%)	3,208 (38%)	4,817 (65%)	9,024 (91%)
Highest	7,258 (23%)	7,566 (30%)	9,909 (54%)	4,967 (22%)	4,240 (11%)	4,157 (19%)	6,865 (52%)
By Race and Ethnicity							
White	7,342 (56%)	8,286 (65%)	12,613 (78%)	6,989 (62%)	4,778 (55%)	5,765 (62%)	9,421 (90%)
Black or African American	6,992 (75%)	8,460 (84%)	12,317 (92%)	8,146 (81%)	5,447 (84%)	5,807 (79%)	9,791 (97%)
Hispanic or Latino	6,108 (68%)	7,614 (83%)	11,684 (92%)	6,534 (82%)	5,082 (76%)	5,299 (73%)	9,345 (96%)
Asian	8,481 (70%)	9,902 (78%)	16,472 (91%)	8,358 (76%)	6,146 (73%)	6,645 (67%)	12,055 (91%)
American Indian or Alaska Native	5,482 (60%)	6,797 (68%)	low n	6,699 (63%)	low n	5,535 (67%)	8,824 (89%)

Source: Calculations by the authors using the National Center for Education Statistics, 2004 National Postsecondary Student Aid Survey (NPSAS) Data Analysis System (DAS), Online version 4.0. Accessed November 10, 2006.

Notes: Unmet need is defined as the total student budget (tuition, required fees, room and board, books, and other living expenses) minus the Expected Family Contribution (EFC) and all grants received as financial aid (includes need-based grants, merit-based scholarships, private scholarships, and employer tuition reimbursement). Only students with positive unmet need are included in the calculation of the average. The total student budget is adjusted according to the student's attendance intensity (full- or part-time and full- or part-year). Dependent students are defined as students who do not meet any of the following criteria: twenty-four or older, veteran, enrolled in a graduate or professional program, married, orphan or ward of the court, or have legal dependents other than a spouse. The benchmarks for the income quartiles are 25th, 50th, and 75th percentiles. "Low n" appears where the number of valid cases is too small to produce a reliable estimate. Only students attending one institution during the year are included.

TABLE 3 *Average Unmet Need in Dollars and the Percentage of Students with Unmet Need after All Aid, 2003–2004*

	Dependent Students					*Independent Students*	
		Full-Time/Full-Year Only					
	All Dependent Students	*All Full-Time/ Full-Year*	*Private Four-Year*	*Public Four-Year*	*Public Two-Year*	*All Independent Students*	*All Full-Time/ Full-Year*
Overall	5,911	6,726	10,365	5,742	4,720	4,503	7,049
	(45%)	(51%)	(56%)	(47%)	(56%)	(53%)	(71%)
By Income Quartile							
Lowest	5,684	6,783	9,692	6,167	5,567	5,120	7,568
	(79%)	(83%)	(85%)	(77%)	(91%)	(84%)	(79%)
Lower Middle	5,677	6,514	10,549	5,955	4,298	4,468	6,757
	(58%)	(71%)	(71%)	(71%)	(72%)	(66%)	(77%)
Upper Middle	6,160	6,489	11,111	5,000	3,050	3,811	6,889
	(30%)	(40%)	(50%)	(39%)	(31%)	(49%)	(69%)
Highest	7,727	7,843	10,330	4,894	3,979	3,282	$5,415
	(13%)	(17%)	(32%)	(12%)	(7%)	(12%)	(37%)
By Race and Ethnicity							
White	6,175	6,874	10,731	5,804	4,446	4,419	6,634
	(40%)	(46%)	(51%)	(43%)	(48%)	(47%)	(67%)
Black or African American	4,819	5,496	7,124	4,975	5,047	4,431	7,021
	(56%)	(61%)	(63%)	(54%)	(73%)	(64%)	(78%)
Hispanic or Latino	5,029	6,075	8,853	5,105	4,876	4,387	7,260
	(58%)	(70%)	(76%)	(66%)	(73%)	(62%)	(80%)
Asian	7,483	8,544	13,959	7,129	6,148	5,989	10,908
	(60%)	(67%)	(76%)	(63%)	(69%)	(59%)	(77%)
American Indian or Alaska Native	4,470	5,187	low n	4,783	low n	3,822	5,452
	(46%)	(52%)		(49%)		(50%)	(57%)

Source: Calculations by the authors using the National Center for Education Statistics, 2004 National Postsecondary Student Aid Survey (NPSAS) Data Analysis System (DAS), Online version 4.0. Accessed November 10, 2006.

Notes: Unmet need is defined as the total student budget (tuition, required fees, room and board, books, and other living expenses) minus the Expected Family Contribution (EFC) and all forms of aid (grants and loans from all sources including the government, institutions, and private sources). Only students with positive unmet need are included in the calculation of the average. The total student budget is adjusted according to the student's attendance intensity (full- or part-time and full- or part-year). Dependent students are defined as students who do not meet any of the following criteria: twenty-four or older, veteran, enrolled in a graduate or professional program, married, orphan or ward of the court, or have legal dependents other than a spouse. The benchmarks for the income quartiles are the 25th, 50th and 75th percentiles. "Low n" appears where the number of valid cases is too small to produce a reliable estimate. Only students attending one institution during the year are included.

It is encouraging to note that the average unmet need after grants and loans tends to be lower for students at the bottom end of the income distribution than for more-affluent students. However, a much higher percentage of low-income students demonstrate unmet need than their higher-income counterparts. For instance, among dependent students, those from the lowest income quartile had $5,684 in average unmet need, compared to $7,727 for students from the highest quartile. Still, it is striking that 79 percent of the low-income students demonstrated unmet need greater than zero after all grants and loans, compared to only 13 percent of the high-income students. Another concern when considering unmet need by income is that the lowest-income students attending full-time, full-year at public institutions faced the *highest* average unmet need, and a much greater percentage of these students had unmet need than students with higher family incomes.

Similar patterns appear when examining the unmet need faced by different racial groups. Black dependent students demonstrated average unmet need of $4,819, compared to $6,175 for White dependent students, but 56 percent of Black students had unmet need after all aid, whereas only 40 percent of Whites had unmet need. Similar patterns are also found when comparing the unmet needs of Hispanic versus White students. In other words, groups whose access to higher education has historically been most limited remained especially likely to have their financial need unfulfilled by family contributions and all sources of grants and loans.

Unmet need appears to have grown rapidly in recent years. In 1995–1996, full-time, full-year undergraduates averaged $3,092 in unmet need after accounting for all aid (NCES, 1996), while it was $6,726 by 2003–2004, as shown in Table 3. Furthermore, increases in average unmet need over this period have been greatest for the lowest-income students. In 1995–1996, these students faced average unmet need of $3,301 at a public two-year college, compared to $3,876 and $6,463 at public and private four-years, respectively (NCES, 1996). By 2003–2004, increases in unmet need for dependent students in the lowest income quartile at public two-year institutions amounted to $5,567, an increase of 68 percent, compared to a 59 percent increase for these students at public four-year institutions, and a 49 percent increase at private four-year institutions (see Table 3). Public institutions, particularly two-year community colleges, constitute the segment of higher education that has traditionally been most available to disadvantaged students. The fact that unmet need has grown most rapidly at these institutions in recent years raises concerns about the ability of the aid system to ensure access to those most in need of support.

Conclusions and Thoughts for the Future

This article discusses recent trends in financial aid, including the shift in focus away from need-based aid policies, the issue of net versus list price, and

the growing reliance on loans and rise in student debt. Moreover, our analysis documents the significant amount of unmet financial need faced by many students — particularly students from low-income backgrounds and students of color. Despite the billions of dollars provided in grants and loans by the federal government, states, institutions, and private sources, many students are left with the dilemma of how to make up the difference between their available resources (including aid packages and family contributions) and the cost of their educations.

How are students and families dealing with these large unmet needs? Some struggle to do this by incurring high-interest credit card debt. A study by Nellie Mae in 2005 found that almost 24 percent of undergraduates had to use a credit card for tuition expenses, while 71 percent report using a credit card to pay for textbooks. Others work an excessive number of hours, which can have a negative impact on their college performance. Eight out of ten in-state undergraduate students worked while in college, and over one-third reported working thirty-five hours or more per week during the 2003–2004 school year (Berkner et al., 2006). In addition to possibly jeopardizing their academic performance, students who work long hours to meet their financial needs also risk being expected to contribute an even greater amount to their educational costs the following year and qualifying for even less financial aid.

It is important to remember that the unmet need amounts discussed in this article are *in addition* to the amount the family is expected to pay (the EFC). Many families, particularly low-income families, have difficulty meeting the expectations of the EFC, and so the remaining financial need that is unmet is extremely hard to manage. It is also worth noting that the levels of unmet need and the percentage of students exhibiting financial need only accounts for those students who were somehow able to overcome their shortfall and *enroll* in college. Unmet need becomes an even larger issue when one considers the thousands of students who are unable to bridge the difference between the cost of attendance and available resources. Because they never make it to college, these students are not represented in the data.

Trends suggest that higher education will face even greater challenges in the future. Analysis by Carnevale and Fry (2000) concludes that the undergraduate population will grow by more than 2.6 million students by 2015. Notably, over three-quarters of this growth will be made up of persons of color. This assertion is further supported by Swail (2002), who estimates that a majority of the 18- to 24-year-olds will be minorities by 2050, based on data from the U.S. Census Bureau. Additionally, older students are increasingly accessing higher education. These nontraditional students face heightened challenges, including the fact that they often balance time-consuming work and family responsibilities with the demands of attending college.

The increasing numbers and the rapidly changing demographic make-up of students will exert increasing pressure on the already strapped financial aid system. Not only will there be a dramatic increase in the number of stu-

dents on America's campuses but, more importantly, it is likely that a disproportionate number of tomorrow's college students will be from low- or moderate-income families. If college costs continue to rise at such a rapid pace, the American higher education aid system will be further strained. In summary, higher education is at a critical point as it tries to balance uncertain and limited resources with growing and changing demands. While the returns of a college education remain large, and one might expect students to bear at least some of the financial burden for a postsecondary education, we need to ensure that the system addresses the needs of those students who typically face the most restricted access to postsecondary education.

During the past several years, many of the debates about policy options have focused on using loans as a financial aid tool. As detailed above, loan burden has become an increasing concern. However, such conversations often fail to consider the other potentially negative effects of loans on college access, career choice, and long-term decisions such as home ownership and marriage. Because they could impact the behavior of students for years to come, and because the risk of default appears to be especially high among the large numbers of students who drop out of college before completing a degree, special care should be taken before endorsing loans as the primary form of financial aid. The unwillingness of some groups to take out loans due to a lack of experience with debt, such as a home mortgage, is also a concern.

Instead, policymakers must remain attentive to the power of the Pell Grant in providing access for low-income students. Years of research demonstrate that grants can make a difference in enrollment decisions. Unfortunately, the purchasing power of the Pell Grant is only a fraction of its original level, and serious reinvestment is needed to boost it to a more meaningful level. However, the process of securing financial aid is exceedingly difficult in its current form, and so policymakers also need to consider how the design of a policy could influence its effectiveness in increasing student access and success. Steps should be taken to simplify the financial aid application process, including the FAFSA, and to increase awareness about financial aid options, such as the Pell Grant.

The increasing popularity of merit-based aid should also be carefully considered. As noted above, there has been a substantial increase in the use of merit-based aid, and with limited resources, many speculate that this has been to the detriment of need-based aid. Given the substantial unmet needs of low-income students, states and institutions must be careful not to abandon the mission of access. Addressing the significant financial barriers that many low-income students and students of color face could greatly increase access to higher education and persistence toward earning a credential. The benefits of such actions would be shared both privately and among society as a whole by reducing the numbers who would potentially be dependent on the government or become incarcerated.

Given current trends, gaps in access, and significant unmet need, it is imperative that the country work to make certain that financial barriers do not negatively impact access to college or persistence toward a degree. Moreover, financial aid policy may also address other major hurdles to college access and persistence — namely, academic preparation and the availability of information. If students believe they will be able to meet the costs of higher education, they may be more likely to prepare for college and to pursue information about how to enroll. As evidenced by the analysis presented here, the inability of the financial aid system to meet the needs of many students should serve as a call to action to build a more effective system — a better bridge to college access and success.

Notes

1. U.S. Census Bureau, Current Population Survey, March 2005. Calculated by author using median income by education level. Available at http://pubdb3.census.gov/macro/032005/perinc/new03_010.htm.
2. Authors' computations using 2004 October Current Population Survey.
3. The definition of "college-qualified" is from Berkner and Chavez (1997). Students were judged to be college qualified if they met any of five criteria that would place them among the top 75 percent of four-year college students for that criterion. The minimum values for qualified were a class rank of the 46th percentile, an academic GPA of 2.7, an SAT combined score of 820, an ACT composite score of 19, or a NELS-88 test score of the 56th percentile.
4. Median household income in 2004 was $54,061.
5. Median family income in 1976 in 2004 dollars was $43,776.
6. Greene and Foster (2003) define being minimally college ready as (1) graduating from high school, (2) having taken four years of English, three years of math, and two years of science, social science, and foreign language, and (3) demonstrating basic literacy skills by scoring at least 265 on the reading National Assessment of Educational Progress.
7. According to the National Center for Educational Statistics (1996), 39 percent of colleges surveyed reported that remedial enrollments had increased during the last five years. In Ohio, the percentage of recent graduates enrolled in math remediation rose from 17.8 percent to 30 percent between 1988 and 2004 (Ohio Board of Regents, 2005).
8. Using a detailed longitudinal dataset of approximately 28,000 students in Ohio, Bettinger and Long (2006) compare the educational outcomes of students in remediation to students with similar backgrounds and preparation who were not required to take remedial courses. The results suggest that remediation increased the likelihood of persisting, transferring to a higher-level or more selective college, and completing a four-year degree.
9. Total cost of attendance, which is prorated based on the student's enrollment intensity (whether they attend full- or part-time), includes tuition, fees, room and board, and other costs at the institution the student attends.
10. This limit will go into effect July 1, 2007. The current limit is $2,625.
11. Based on the financial aid records from twenty-eight highly selective private colleges and universities in the Consortium on the Financing of Higher Education.
12. These loan amounts reflect all sources, excluding amounts parents borrowed under the PLUS program.

13. Guidelines regarding the percentage of pretax income devoted to student loans are meant to ensure that borrowers are able to meet other expenses, such as car payments, rent or mortgage, and additional household expenses. The 8 percent rule was derived from credit-underwriting standards that limit monthly mortgage payments to 25–29 percent of the borrower's income and total monthly debt payments to 36–41 percent of income (Scherschel, 1998).
14. Calculated using the student loan calculator at www.finaid.org.
15. The National Student Loan Survey (NASLS) was conducted in 1987, 1991, 1997, and 2002. The 2002 NASLS survey population was drawn from a random sampling of student loan borrowers in repayment with at least one federal loan held by Nellie Mae and a valid U.S. postal address. All borrowers included had started payments at least six months prior to the survey, but no more than four years prior. Borrowers in default were excluded. The survey had 1,280 responses, a response rate of 24 percent.
16. The data are sponsored by the National Center for Education Statistics and are publicly available using the Data Analysis System (http://nces.ed.gov/das). Another goal of the survey is to describe the demographic and other characteristics of those enrolled.
17. For example, part-time students face educational costs that are only a fraction of the full-time cost. Likewise, students who attend only one semester face a lower cost than a full-year student. Therefore, educational costs may differ across students within the same institution.
18. It is important to note that the information on private and outside financial aid is self-reported and may not capture all of these funds. Credit card debt is not included.

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