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The Impact of Increases in Pell Grant Awards on College-going among Lower Income Youth

Evidence from a Natural Experiment

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Summary

During the 2006-2007 academic year, grants accounted for $52 billion, roughly half of the student aid received by undergraduate college students. The largest grant program—the federal Pell program—provided $13 billion in grants, primarily to lower-income students. Although grant programs provide significant support to students, their impacts have been disappointing—substantial inequalities in college-going and completion rates of youth from different income groups remain large and persistent. Despite extensive research, the impact of grants on college-going remains uncertain.

A recent natural experiment (during which net prices of important categories of colleges declined) provides an opportunity to reassess the effect of grant programs on college-going among lower income youth. Between 1996 and 2002, increases in Pell and other grant awards and relatively stable tuition and fees charges at lower-price public colleges combined to create small but steady declines in net-of-grant prices facing these traditionally underserved youth. During these years, the net-of-grant prices declined by roughly $950 to $1,000 for low-income students (those from families with incomes below $30,000 per year in constant 2005 dollars) enrolled in public two- and four-year (non Ph.D. granting) colleges.

These grant-induced reductions in net prices appear to have stimulated small but meaningful increases in college-going among these youth. Because the Pell program accounted for most of the increases in grant support during these years, the results of this natural experiment indicate that Pell awards are an important contributor to the positive impact of grant-induced declines in net prices on college-going.

Assessing Grant Effectiveness

The uncertain impact of student grants has restricted the resolution of many important policy questions regarding the funding and design of student aid programs. While many research studies have clearly indicated that list college prices (published tuition and fee charges) affect college-going rates (particularly among lower-income youth), the potential impact of grant-induced reductions in net college prices (i.e., tuition and fees less grants) is far less clear. In a 2005 report on student aid, the Government Accountability Office (GAO) reported that “little is known about the effectiveness of federal grant and loan programs … in promoting attendance.” Similarly, a recent Urban Institute-Brookings Tax Policy Center report noted that the resolution of the policy issues regarding the Pell program and federal tax benefits “is made far more complicated by the lack of strong, research-based evidence regarding the effectiveness of current grant and tax policy instruments.”

But the evidence regarding the effectiveness of grant programs is not entirely disappointing. A small number of reliable research studies indicate that large, consistently funded, well-targeted, easy-to-understand and well-publicized grant programs are likely to have small but significant effects on college-going. Regrettably, most grant programs, including the Pell program, lack many of these impact-producing characteristics. In addition, the disappointing or inconclusive results of many studies of the Pell program may not demonstrate that the program itself is ineffective because other factors (such as increases in tuition and fees) may have contributed to the lack of readily observable, enrollment-increasing impacts.

To overcome this lack of evidence of Pell program effectiveness and guide the development of strategies for improving the program’s performance, several policy makers and analysts have suggested that the program should be studied using a carefully controlled and well documented social experiment. Similar, large scale, federally funded experiments have provided extensive evidence regarding the effects of health insurance and income maintenance policies.

The Pell Natural Experiment

Although a formal, controlled experiment testing the impact of the Pell program has not been conducted, a 'natural experiment' did occur during the 1996-2004 years. During most of this period (1996-2002), increases in Pell and other grant awards and relatively stable public college tuitions combined to create small, but steady declines in net-of-grant prices. These declines created an opportunity to assess the impact of grant programs on college-going among lower income high school graduates. These grant-induced price declines were concentrated in lower-price public colleges (two- and four-year, non Ph.D. granting colleges), an especially important segment of the college marketplace because these schools are the most likely choices of lower-income youth who are on the margin between attending and not attending college.

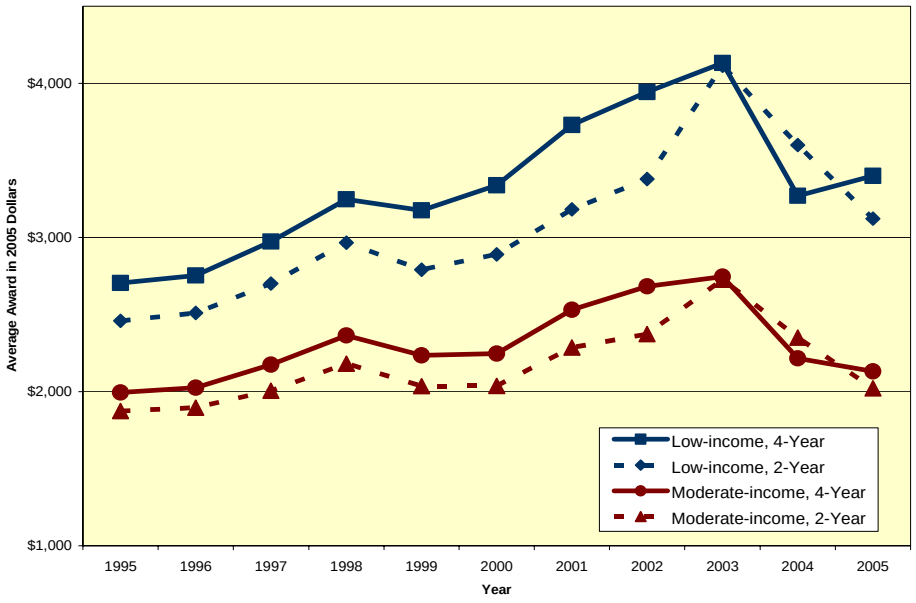
This natural experiment provides an important context for assessing the impact of the Pell program because a large share of the increases in grant awards resulted from increases in Pell grant awards. Because the Pell program is a uniform national program this natural experiment did not create an opportunity for a more classical evaluation based on an assessment of the impact of geographic variations in grant awards. Similarly, because Pell awards increased slowly during the period of natural experimentation (rather than dramatically in a single year), a straightforward 'before and after' comparison is not possible.

Fortunately, during the period of this natural experiment, the high-quality and readily available data needed to carefully assess the impact of the price changes were collected. These data include information from several sources: the National Center for Education Statistics' National Postsecondary Student Aid Study (NPSAS); the Department of Education's Pell Program operations; the Census Bureau's annual Current Population Surveys of school enrollment; and the College Board's annual surveys of college prices.

Price Declines during the Experiment

Between 1996 and 2002, low-income youth from families with incomes below $30,000 in 2005 dollars who enrolled in public colleges immediately following high school received significantly larger amounts of Pell support (see Figure 1). Moderate-income youth (from families with incomes between $30,000 and $50,000) experienced smaller increases in Pell support. Changes in the average amount of support which these students received from other grant programs followed similar trends.

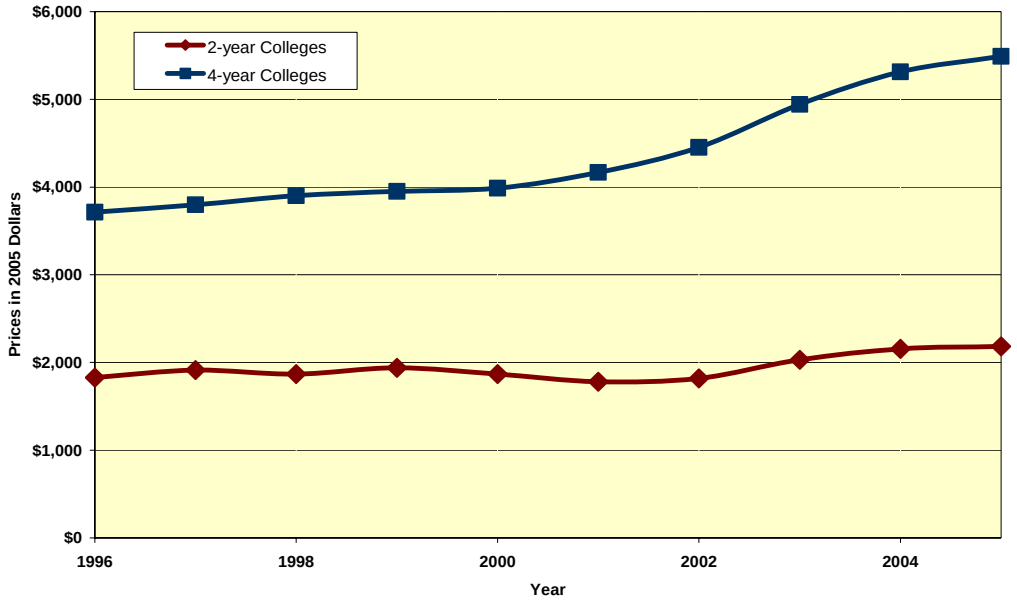
Figure 1
Average Pell Awards for Low- and Moderate-Income Pell Recipients



Source: Authors' calculations based on data derived from Pell Program Operations Data
Note: Data represents estimated immediate post-high school completion of full-time enrollees.

During these years of increasing grant support, list prices (tuition and fee charges) for students enrolled in lower-price public colleges remained relatively stable. Between 1996 and 2002, the average list prices in constant dollars remained essentially constant for public two-year colleges. During these years, the list prices of public four-year colleges increased slowly (See Figure 2).

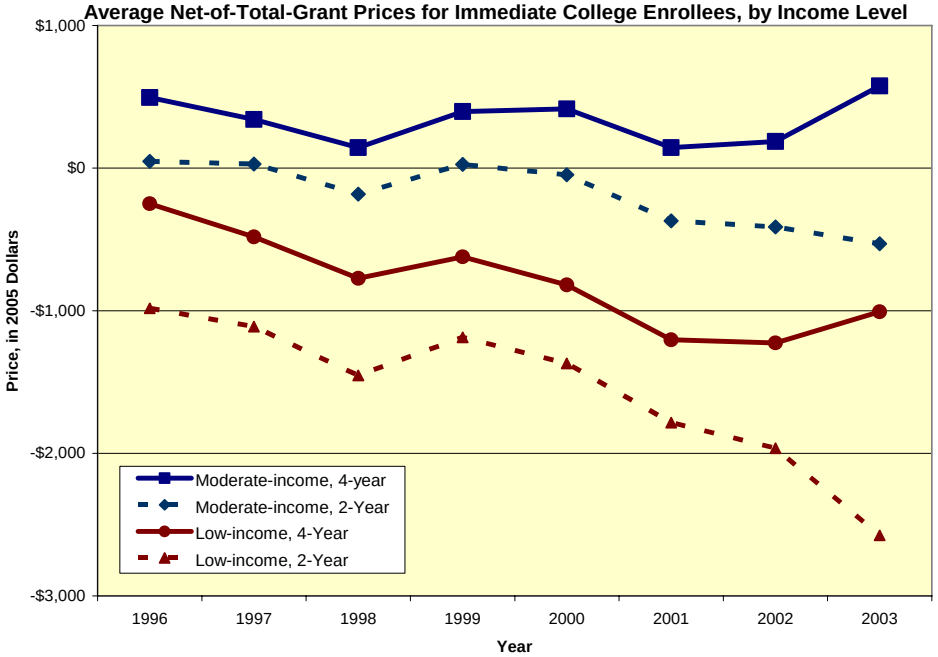
Figure 2
Average List Prices for Two-year and Four-year non Ph.D. granting Colleges



Source: College Board, *Trends in Student Aid 2006* (New York, NY: The College Board, 2006).
Note: Prices include tuition and fees. Prices were revised to represent 2005 dollars.

In combination, the increases in grant support and stability of tuition and fee charges caused the net-of-grant prices of public two- and four-year colleges to decline (Figure 3). For low-income, immediate college-goers enrolled in these colleges, net-of-grant prices declined by roughly $950 to $1000. For moderate-income, immediate college-goers, declines in net-of-grant prices were smaller—roughly $550 to $600 for public two-year college enrollees and $300 to $350 for those in public four-year college enrollees.

Figure 3
Average Net-of-Total-Grant Prices for Immediate College Enrollees, by Income Level



Source: Derived from Figures 1 and 2 in this brief and authors' calculations based on data derived from the Department of Education, and the National Center for Eduation Statistics' National Postsecondary Student Aid Surveys (NPSAS).
Note: Estimated net-of-grant prices for immediate, full-time enrollees attending non-PhD granting colleges.

Did Price Declines Affect Enrollment?

To assess whether the net-of-grant price declines that occurred during the natural experiment stimulated increased college-going among lower-income youth, it is necessary to answer two questions. First, when was it likely that the declines in net-of-grant prices might have influenced college-going among lower income youth? Second, could changes in non-price factors that influence college-going rates have accounted for or contributed to any observed changes in college-going during the experimental period?

With respect to the issue of delays between price changes and their impact, it seems reasonable to assume that the price declines which occurred during the early years of the period did not immediately influence college-going. Small, unannounced declines in net prices are unlikely to have had immediate effects on college-going. It is more likely that during the initial years of the experimental period, prior year price increases had more of an impact on enrollment decisions than did the price declines during the first and second years—1996 and 1997. It also seems likely that the lags between price changes and their impacts became shorter over the experimental period as price declines continued. This assumed overall pattern of lags in price suggests that if the price declines during the 1996-2002 period did have an effect on college-going, it would be more likely to be observable between 1999 and 2004, following the initial years of the experiment. Although this pattern of lagging impact of price changes appears reasonable, there is no research-based evidence that indicates whether this hypothetical pattern of lags represents a valid assumption.

During the 1999-2004 years, high school graduates from different family income groups experienced different changes in their immediate, post-high school college-going rates (as measured using data from the annual Current Population Survey October supplements focused on school enrollment). For low-income high school graduates, who experienced the greatest declines in net-of-grant prices, college-going tended to increase steadily while the rates for moderate-income and middle-income youth tended to decline during the 1999-2001 years and increase subsequently.

But these observed changes in college-going rates were probably not solely the result of the declines in the net-of-grant prices occurring during the 1992-2004 years. Changes in other factors that influence college-going—such as changing characteristics of high school graduates and their families and changing economic conditions—may also have had an impact on college-going during these years. Although the ability and achievement levels of high school seniors remained relatively constant during the period, the high school completion rates of low- and moderate-income seniors declined. These declining high school completion rates may have resulted in increases in the calculated post-high school completion, college-going rates, because those seniors who fail to complete high school would almost certainly be less likely than other seniors to attend college, even if they had completed high school.

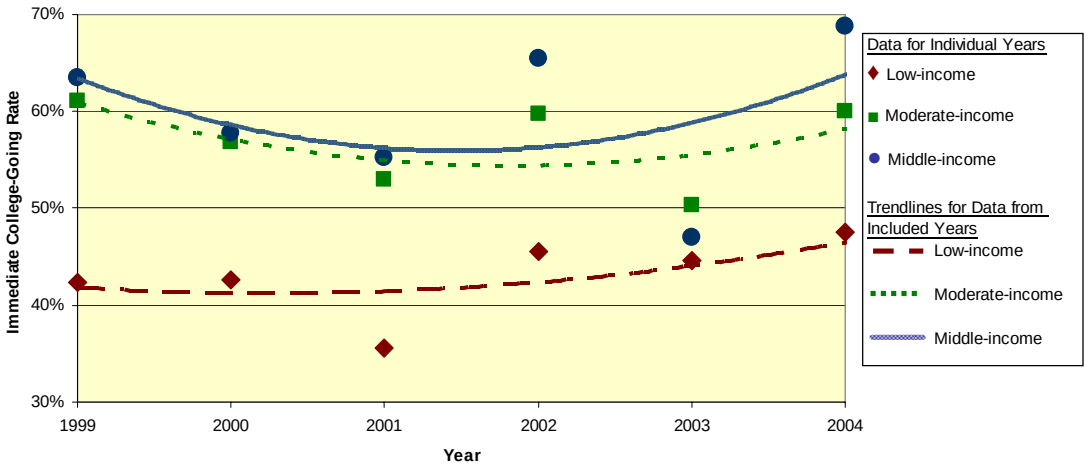
In addition, the non-income characteristics of the families of high school completers changed during the experiment. For example, the educational attainment levels of the parents of low-income high school graduates declined between 1999 and 2004, probably reducing the upward trend of college-going among these potential college enrollees.

Economic conditions also changed during the period of the natural experiment and these changes are likely to have affected college-going rates, particularly among lower-income high school completers who were more likely to have considered entering the workforce as an alternative to college-going. During the early years of the natural experiment (1996-2000), unemployment rates declined and this change in the economy probably resulted in a lower college-going rate among lower-income high school graduates. After 2000, unemployment increased, probably increasing immediate college-going rates from where they would have otherwise been. These post-2000 unemployment-stimulated increases in college-going probably caused the upward trend in the observed college going rate among low-income high school graduates to be steeper than it would have been had unemployment remained stable during the 1999-2004 years.

To remove or correct for the possible influences of each of these changes in non-price factors on college-going, it is necessary to adjust the observed college-going rates for the impact of these changes. These corrections for changes in non-price factors that were uncontrolled during the natural experiment result in adjusted enrollment rate trends that hypothetically solely reflect the impact of price changes on college-going. The adjustment needed to correct for the changing unemployment rates can be derived from available research. Although there is no research that suggests a correction factor for adjusting observed college-going rates for changes in high school completion rates, it seems reasonable to adjust the college-going rate by assuming that none of the high school students who drop out of high school during their senior year would have enrolled in college had they graduated from high school.

Using a reasonable set of assumptions to adjust the observed college enrollment rates for the impact of the various changes in non-price factors yields a set of 'adjusted' or 'corrected' college-going rates. A review of these adjusted rates indicates that college-going of low-income youth began to increase following the start of the period of declining net-of-grant prices. The increased college-going among these potential students was more steady and more rapid during the 1999-2004 years than the rates for their moderate-income counterparts, who experienced smaller and less consistent price declines (Figure 4).

Figure 4
Estimated Immediate College-Going Rates for High School Graduates by Income Level



Source: Authors' calculations based on data derived from Bureau of the Census, Current Population Surveys (annual October supplements, various years).
Note: Rate is adjusted for changes in position in income distribution, high school completion rate, and unemployment rate.

Lessons from the Natural Experiment

The results of the 1996-2004 natural experiment indicate that increases in grant support stimulate increases in college-going among low-income youth when increased grant awards result in declines in net-of-grant prices. The validity of this result is strengthened by the numerous statistical studies that demonstrate that lower college prices result in increased college-going among lower income youth. In addition, because Pell grants accounted for most of the increases in grant support received by these youth, the results of the study indicate that the Pell program is an important contributor to the positive role of grants in expanding college-going.

These results also suggest that college-going among low-income youth may be somewhat more responsive to grant-induced price declines than previously believed, particularly if net-of-grant prices decline steadily over time. The results of the experiment indicate that a $1,000 decline in the net-of-grant prices of public 2- and 4-year colleges facing low-income high school graduates was associated with an increase of 6 to 7 percentage points in college-going among these youth. This

suggests that college-going among low-income high school graduates is more sensitive to grant-induced price reductions than suggested by previously published studies that have indicated that a net-of-grant decline in prices of $1,000 (in 2005 dollars) would stimulate 4 to 5 percentage point increase in college-going.

For moderate-income youth, the results of the experiment are less clear. These youth experienced smaller and less consistent declines in net-of-grant prices and, as would be expected, the changes in their college-going rate were smaller and less clear.

Authors

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Additional Reading

Susan M. Dynarski and Judith E. Scott-Clayton, “College Grants on a Postcard: A Proposal for Simple and Predictable Federal Student Aid,” Hamilton Project discussion paper, (Washington. DC: The Brookings Institution, February 2007).

Elaine Maag, David Mundel, Lois Rice, and Kim Reuben, *Subsidizing Higher Education through Tax and Spending Programs*, Policy Brief No. 18 (Washington, D.C.: Urban-Brookings Tax Policy Center, May 2007).

David S. Mundel, “Do Increases in Pell and Other Grant Awards Increase College-going among Lower Income High School Graduates?” Paper prepared for a conference at the Brookings Institution, December 8, 2008.

David S. Mundel, “What Do We Know about the Impact of Grants to College Students,” in *The Effectiveness of Student Aid Policies: What the Research Tells Us*, eds. Sandy Baum, Michael McPherson, and Patricia Steele (Washington, D.C.: The College Board, 2008), pp. 9-37.

Lois Rice and Arthur Hauptman, *Coordinating Financial Aid with Tuition Tax Benefits*, Brookings Policy Brief No. 3 (Washington, D.C: The Brookings Institution, June 2000).