



Does Federal Financial Aid Drive Up College Prices?

ACE American
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Leadership and Advocacy

Donald E. Heller
Dean, College of Education
Michigan State University



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I. Introduction

In 1987, then U.S. secretary of education William Bennett authored an op-ed piece in *The New York Times* titled “Our Greedy Colleges.” In the piece, Bennett complained about a comment made by Benno C. Schmidt Jr., then the president of Yale University (CT), who had blamed Yale’s tuition hike on cutbacks in federal financial aid. Bennett responded by writing, “If anything, increases in financial aid in recent years have enabled colleges and universities blithely to raise their tuitions, confident that Federal loan subsidies would help cushion the increase” (Bennett, 1987, p. A31). The theory behind Bennett’s assertion is relatively simple: The availability of federal loans—particularly subsidized loans offering a below-market interest rate and payment of interest as long as the student is enrolled in school—provides “cover” for colleges to raise their prices, because students can offset a price increase, or at least a portion of that increase, with federal loans.

This one sentence became perhaps the one thing for which Bennett is best known, and it is commonly referred to as the “Bennett Hypothesis.” A Google web search of the terms “Bennett hypothesis,” “tuition,” and “financial aid” provides more than 100,000 results. Over the 25 years since he wrote the op-ed, however, people have misremembered the specifics of both his words and his intent. Bennett was speaking only about the impact of federal subsidized loans on college tuition prices, not about all federal financial aid, let alone all financial aid from all sources. In addition, Bennett was cautious in not implying that federal loan subsidies were the only or even the primary driver of tuition price increases, stating, “Federal student aid policies do not cause college price inflation, but there is little doubt that they help make it possible” (p. A31). While being somewhat cautious, he does leave the reader with the impression that there is some causal linkage between federal subsidized loans and increasing tuition prices.

But over the years, people have reinterpreted the Bennett Hypothesis more broadly, in terms of both the scope and the strength of the relationship between financial aid increases and tuition increases. Numerous stories in the media, as well as monographs, journal articles, book chapters, and policy briefings, describe the Bennett Hypothesis either directly or indirectly. A smaller number of these research studies then proceed to empirically test

the relationship between tuition price increases and loans, as well as state, federal, and institutional grants.

This report examines research that attempts to prove or disprove the Bennett Hypothesis, with a focus primarily on the impact of federal grants and loans on college and university tuition price increases. Section two presents a brief overview of federal student financial aid programs, recent trends in tuition prices, and the economic theory behind financial aid and tuition prices. Section three reviews some of the research that has analyzed the veracity of the Bennett Hypothesis over the years. (The reader is invited to peruse the detailed analyses below, though the results must be presaged by saying that the research on the relationship between federal financial aid and tuition price increases can be described as ambiguous at best.) Section three also describes studies with similar methodologies but contrary findings. The research suffers from limitations in the data used, particularly in the measures of federal aid used as predictors. There are also limitations in the data analysis methodologies employed, including the researchers' inability to fully control for all of the complex factors that go into the decisions that institutions make when determining tuition prices. More details about these issues are presented in this section. The final section summarizes what this body of research tells us about the relationship between federal student aid and tuition prices.

II. An Overview of Federal Financial Aid and Tuition Prices

Federal aid over the years

Federal financial support for college students originated with the Servicemen's Readjustment Act, more commonly known as the GI Bill, passed by Congress and signed into law by President Roosevelt in 1944 (Bennett, 1996; Greenberg, 1997). This legislation provided grants, as well as stipends for living expenses, for military veterans returning from World War II to attend college.

The first federal student loan programs were created as part of the National Defense Education Act of 1958, passed by Congress in response to the launching of the Sputnik satellite by the Soviet Union, among other concerns (Mumper, 1996). This legislation provided federally subsidized loans to undergraduate and graduate students studying in areas deemed to be critical to national defense, including science, engineering, and certain foreign languages.

It was the passage of the Higher Education Act of 1965, however, that first authorized broad-based loan and grant programs. Federal subsidized loans began almost immediately after passage of the act and, beginning with its 1972 reauthorization, federal grants became available. Both the loans and grants were targeted at students with financial need, with the goal of helping to eliminate price barriers for those who were unable to afford to attend college.

Over the ensuing five decades, the federal student financial aid programs, collectively known as the Title IV programs (as they are authorized under Title IV of the Higher Education Act), have grown to the point that today they help millions of students each year to pay for college. Table 1 shows the percentage of undergraduate students receiving federal grants and loans in the 1995–96 and 2007–08 academic years.¹ By the latter year, almost half of all full-time undergraduates were borrowing in the federal student loan programs, and one-third received federal grants.

Table 1: Percentage of undergraduate students receiving federal grants and loans

	1995-96		2007-08	
	All students	Full-time students	All students	Full-time students
Grants	22.2%	30.3%	27.6%	33%
Loans	25.6%	43.6%	34.7%	49.1%

Source: V. Bersudskaya & C. Chang Wei. (2011). *Trends in Student Financing of Undergraduate Education: Selected Years, 1995–96 to 2007–08*.

Since the economic recession that hit the United States in late 2007, federal financial aid has grown even further. The College Board (2011b) reported that in the 2010–11 academic year, 9.1 million students received Pell grants, representing 36 percent of all undergraduates that year, an increase from the 25 percent three years earlier in 2007–08.² The percentage of undergraduate students borrowing did

¹ Federal loans are also provided to graduate and professional students, but as the Bennett Hypothesis has been applied almost exclusively to undergraduate tuition increases, the focus of this report is on undergraduates only.

² Analysis of the proportion of undergraduates receiving Pell grants was done by the author. The sources for this analysis were the U.S. Department of Education’s 2010–2011 *Federal Pell Grant Program End-of-Year Report* and the 2007 and 2010 Integrated Postsecondary Education Data System (IPEDS) 12-month enrollment surveys.

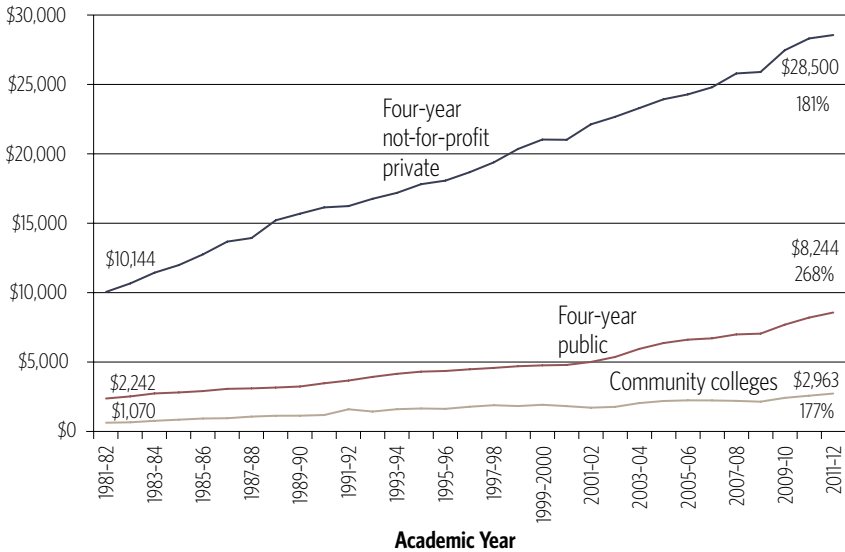
not change appreciably, however, with 8.7 million undergraduate students receiving federal student loans. They represented 47 percent of all borrowers, a slight decline from the 49.1 percent of students in 2007–08 who borrowed. The large increase in Pell recipients from 2007–08 to 2010–11 was caused by more students meeting the means-testing requirements of the Pell grant program. There were two likely reasons for this: 1) Lower family incomes and asset values, due to the economic downturn, mean more students qualify for grants, and 2) As job prospects worsen and the opportunity cost of college attendance decreases, more students opt to go to college. The increased demand for and receipt of Pell grants has caused the cost of the program to skyrocket, from \$14.7 billion in 2007–08 to \$34.8 billion in 2010–11 (College Board, 2011b).

In summary, participation in the federal Title IV programs has grown over the years, and the growth—particularly in the number of students receiving grants—has been quite rapid since the recession. This has brought increased scrutiny to the program and has only accelerated the concern that the flow of federal funds may provide an incentive for higher education institutions to raise their prices.

The growth in tuition prices

Much has been written over the years about the rise in college tuition prices over the last three decades (Archibald & Feldman, 2011; Clotfelter, 1996; Ehrenberg, 2000; Heller, 2011; Morgenthau & Nayyar, 1996; Mumper & Freeman, 2011). Figure 1 shows the increase in average annual tuition prices in real (constant) dollars over the last three decades in the three major college sectors. (Constant dollars have been adjusted for the impact of inflation, as opposed to current dollars, which are actual dollars paid at a given time.) For example, the price of attending a four-year private, not-for-profit institution increased 181 percent (or almost three times faster than inflation), from an average of \$10,144 in 1981 to \$28,500 in 2011, the latest year for which data were available. Average annual tuition prices at four-year public institutions increased 268 percent, and annual community college tuition prices increased 177 percent.

Figure 1: Changes in annual tuition prices in constant (2011) dollars, 1981 to 2011



Source: College Board. (2011). *Trends in College Pricing: 2011*.

Higher education institutions are complex, often multibillion-dollar institutions, and numerous factors go into the setting of tuition prices at both public and private institutions. However, as stated in the literature cited above, as well as in other sources, there are a number of factors that most analysts agree have helped contribute to these increases, as well as to price increases in almost every other sector of the economy:

- Higher education has always been, and continues to be, a very labor-intensive industry. While technology has been widely embraced in colleges and universities, in most cases the use of technology has enhanced the instructional experience, but not fundamentally changed the educational production function. Much of the labor employed by universities is highly skilled and highly compensated, including benefits packages that are quite generous compared with those received in many other industries.
- Higher education institutions tend to suffer from goal ambiguity, in that their complex missions of teaching, research, and service lack easily identifiable outcomes that can be objectively measured. This absence of clear, measurable goals ham-

pers universities in their attempts to control costs by closing or shrinking marginal programs. Instead, new initiatives tend to get layered on top of old ones, thus adding to costs. Some observers blame the strong role that faculty governance plays in this process, particularly at more elite universities (Clotfelter, 1996; Ehrenberg, 2000).

- States, which historically had been a major source of funding for public colleges and universities, have been disinvesting in public higher education over the last decade. Total state appropriations for higher education decreased 1.8 percent in real dollars between 2001 and 2011, from \$86.2 billion to \$84.6 billion (State Higher Education Executive Officers, 2012). Because enrollments increased during the same time frame, the impact was even greater when measured on a per-student basis. Appropriations per full-time equivalent student decreased 24.4 percent across the nation over the decade, from \$8,316 to \$6,290. In fact, per-student appropriations in 2011 were 21.6 percent below the 1986 level—a quarter century earlier—in real dollars. As institutions receive fewer dollars from states in the form of appropriations, they (along with those in states where the legislature or a state governing board sets tuition rates) naturally turn toward tuition revenues to make up the difference. And most institutions choose not to limit enrollments in the face of constrained appropriations.³

It is important to remember that the average prices shown in Figure 1, and those most often reported in the media and examined by policymakers, are sticker prices—prices before any discounts are applied. The average price that students actually pay, after grants, tax credits, and deductions are factored in, has not grown nearly as fast. Table 2 shows the changes in average annual sticker and net prices between the 1996–97 and 2011–12 academic years for in-state students at four-year public institutions and for all students at four-year private, not-for-profit institutions. Over the 15-year period, the posted tuition sticker price at four-year public and four-year not-for-profit private

³ One exception to this is the state of California, where in the face of state appropriations cuts stemming from the most recent recession (as well as those in the past), all three sectors of public higher education—the University of California system, California State University system, and California Community Colleges—put caps on enrollment (Gardner & Blumenstyk, 2012).

institutions rose, on average, 232 and 52 percent, respectively, beyond inflation. Net prices, however, grew by 30 percent or less in each of the two sectors. While net prices did increase faster than inflation during this period, the rise in net prices was smaller—and in the case of public institutions, much smaller—than the rise in sticker prices.

Table 2: Change in average sticker and annual net tuition prices at four-year public and private, not-for-profit colleges and universities in constant (2011) dollars, 1996 to 2011

	Sticker prices			Net Prices		
	1996-97	2011-12	Change	1996-97	2011-12	Change
Public	\$2,480	\$8,244	232%	\$1,910	\$2,490	30%
Private	\$18,700	\$28,500	52%	\$10,630	\$12,970	22%

Note: Net prices are calculated after all grant aid, tax credits, and tax deductions have been applied.

Source: Author's calculations from College Board (2011), *Trends in College Pricing: 2011*.

Economic theory regarding tuition prices and financial aid

Economists describe two types of price inflation: cost-push and demand-pull inflation (Samuelson, 1976). Cost-push inflation results when the underlying prices of goods rise and there are no suitable substitute goods or services. Demand-pull inflation exists when there is an excess of demand and supply remains largely inelastic, or unresponsive, to the increase in demand.

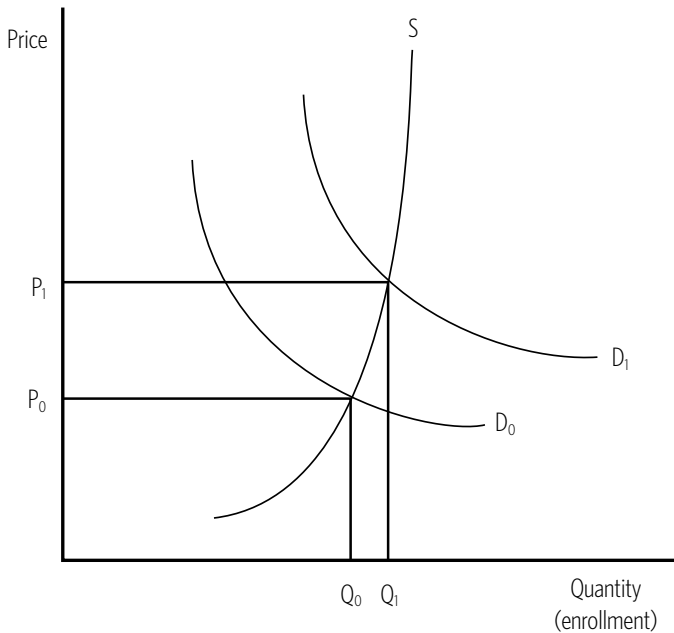
The increase in college and university prices outlined above, much of which was the result of cost-push inflationary pressures, could not have been sustained without an increase in demand for higher education. The increase in the college premium over the last few decades—the additional earnings of college graduates as compared with the earnings of high school graduates—has been well documented (Heller, 2011; Kane & Rouse, 1995; Levy & Murnane, 1992; Murnane, Willett, & Levy, 1995; Murphy & Welch, 1992; Zucker & Dawson, 2001). More and more high school graduates, as well as adult workers with low levels of educational attainment, have noted the college wage premium and have responded by enrolling in postsecondary educational institutions.

The higher education industry in the United States responded to the increased demand by expanding the number of seats available, but not at a rate concomitant with the need. Because higher

education institutions have to be accredited by an agency recognized by the U.S. Department of Education in order to participate in federal financial aid programs (a necessity for most institutions to operate), entry into the market is fairly tightly controlled. Thus, most of this increased supply came from the expansion of existing institutions, rather than the entry of new colleges and universities into the market.⁴

Because supply did not expand as quickly as demand, tuition prices rose more quickly than enrollments. This effect can be seen in Figure 2, which shows the impact on tuition prices and enrollments of the increased demand for higher education.⁵ The curve D_0 represents the demand for higher education prior to the increase in the college wage premium noted earlier, and the curve S represents the supply of higher education. P_0 and Q_0 are the average tuition price and total enrollment, respectively, in the United States, or the equilibrium point

Figure 2: Effect of demand shift on higher education market



⁴ Another factor in the increase in supply was the growth of the for-profit sector, which saw its enrollments in degree-granting institutions increase from 111,000 in 1980 to 2 million in 2010 (Snyder & Dillow, 2012).

⁵ This analysis and figure are adapted from Heller (2011).

given the market supply and demand before the increase in the college wage premium.

Curve D_1 is the demand for higher education as influenced by the increasing wage premium; at each price point, more students choose to enroll in college. The new equilibrium point is at the higher price P_1 and the increased enrollment Q_1 . Due to the relatively inelastic supply of higher education, the proportional increase in price is greater than the enrollment increase. This is borne out by the data: Between 1981 and 2009, total undergraduate enrollment in the nation increased 68 percent (Snyder & Dillow, 2012, table 214). Tuition prices (in current dollars) increased by more than 500 percent in four-year public and not-for-profit private institutions, as well as in community colleges. In the absence of such a demand shift, higher education institutions would not have been able to raise prices to such an extent over the last two decades *and* increase enrollments as they did.

III. The Research on Financial Aid and Tuition Prices

There have been a large number of research studies on tuition prices over the years, with most of these focusing on the impact that rising prices have on college enrollment, persistence, and degree attainment.⁶ Other studies, as described earlier, have focused on the overall determinants of the tuition price increases we have seen in recent years. Far fewer studies have focused on the role that federal financial aid may play in affecting price increases, and the results of these studies will be summarized in this section. The focus is on empirical research addressing the issue.⁷

One of the first studies to attempt to test the Bennett Hypothesis was conducted by economists Michael S. McPherson and Morton Owen Schapiro (1991). Using institutional data from the U.S. Department of Education's Integrated Postsecondary Education Data System (IPEDS) for the years from 1978 to 1985, they examined the relationship between a number of factors—including federal aid—and

⁶ For summaries of this research over the years, see Heller (1997), Jackson and Weathersby (1975), Kim (2010), and Leslie and Brinkman (1988).

⁷ Some policy think tanks have issued reports on the Bennett Hypothesis that do not include rigorous, empirical research to test it. For example, one report from the Cato Institute (Wolfram, 2005), a libertarian-oriented center, relied on its author's experiences as a trustee at a private college. Another, from the Center for College Affordability and Productivity (Gillen, 2012), is a theoretical analysis of the Bennett Hypothesis.

changes in gross tuition revenues during the period. The authors did find a positive relationship between federal aid revenues and tuition revenues at public universities, but not at private universities.⁸ They explain this finding by indicating that “only public four-year institutions can capture additional federal student aid revenue by raising their tuition levels under current arrangements” (p. 72).

In a dissertation from the Department of Economics at Harvard University (MA), Judith Li (1999) also used IPEDS data, along with data on Pell grant recipients at each institution, to conduct a multivariate analysis of the relationship between Pell grant awards and tuition prices from 1984 to 1994. While she did find a relationship at both public and private four-year institutions, she cautions that the inability to measure all variables that could impact institutions’ tuition-setting decisions may have impacted her results.

What is probably the most in-depth analysis on the determinants of college and university tuition prices was a study mandated by Congress in the 1998 reauthorization of the Higher Education Act of 1965 (Cunningham, Wellman, Clinedinst, Merisotis, & Carroll, 2001a, 2001b). In that reauthorization, Congress required that the U.S. Department of Education conduct a study to answer five primary questions:

- How have tuition and fees changed over time compared with inflation?
- How have the major expenditure categories (including capital and technology costs) changed over time?
- How are expenditures related to prices?
- To what extent does institutional aid (i.e., financial aid provided by institutions) affect tuition increases?
- To what extent has federal financial aid been used to offset increases in institutional aid (Cunningham et al., 2001a, p. 3)?

The study, which resulted in a 220-page report, utilized multivariate analyses of institutional data from the U.S. Department of Education’s IPEDS and Institutional Prices and Student Financial Aid Survey (IPSFA). The IPEDS and IPSFA data sets include information

⁸ The authors found that increases in federal aid revenues received at a private university were associated with increased institutional grant spending. They hypothesized that increased Pell grant awards encouraged private universities to enroll more Pell-eligible students, thus adding their own institutional grants on top of the Pell awards.

from all degree-granting, accredited postsecondary institutions, and data from the academic years 1988–89 to 1997–98 were analyzed. The report also included a review of the prior literature.

In order to examine whether the determinants of tuition price increases differ across different types of institutions, the study ran separate multivariate models for seven college sectors: public four-year research/doctoral institutions, public comprehensive institutions, public bachelor's institutions, community colleges, private research/doctoral institutions, private comprehensive institutions, and private bachelor's institutions.⁹ It also examined the relationship between tuition price increases and four types of financial aid: federal grants, state grants, institutional grants, and loans.¹⁰

Across these seven types of institutions, the study found no relationship between either federal or state grant aid, or loans, and tuition price increases:

Regarding the relation [sic] between financial aid and tuition, the regression models found no associations between most of the aid packaging variables (federal grants, state grants, and loans) and changes in tuition in either the public or private not-for-profit sectors (Cunningham et al., 2001a, p. 133).

The only relationship found between financial aid and price increases was for public and private comprehensive institutions, where there was a positive relationship between spending on institutional grants and tuition price increases.

Not surprisingly, in each of the public four-year sectors, the strongest predictor of tuition price increases was the change in revenue from state appropriations; as appropriations increased, tuition price increases were smaller, and as appropriations decreased (or increased more slowly), price increases were greater. At private institutions, tuition price increases were driven primarily by increased costs, including things such as instructional expenditures, faculty salaries, and institutional grant spending. However, price increases at private institutions were also affected by revenues from other sources, including endowment income, gifts, and other grants and contracts.

⁹ For public institutions, the outcome used in the models was the change in tuition for in-state students.

¹⁰ The analyses focused on aid received by first-time, full-time undergraduate students.

A third study utilized a similar methodology of examining institutional-level data over a period of time, but came to a different conclusion (Singell & Stone, 2007). It analyzed data from 1989 to 1996, examining the relationship between the Pell grants received by students at four-year public and private universities and tuition prices. This study had two key differences from the U.S. Department of Education study described above. First, rather than using the year-to-year increase in tuition prices as the outcome of interest, these authors use the absolute amount of tuition each year as the outcome. Second, rather than using the total volume of Pell dollars received at each institution, they instead used just the size of the average Pell grant award (for students who received a Pell grant).

The study found no relationship between the average size of Pell awards and in-state tuition prices at public universities, but did find a positive relationship between Pell and the out-of-state tuition prices in public universities and between Pell and prices at private universities. The applicability of these results is limited, however, because the authors did not have data on the total volume of Pell grants received at each institution. Thus, a change in the size of the average Pell grant award may not have much relationship to the total volume of Pell dollars received at that institution. For example, while the average award could increase by 10 percent, if there were a corresponding decrease in the number of Pell recipients, this could lead to a reduction in the volume of Pell dollars received at the institution. The study also suffered from not having data on the other types of aid (state and institutional grants, as well as loans) that students received at each institution. Thus, it is difficult to ascribe much meaning to the relationships found by the authors.

Another study utilized a similar methodology and IPEDS data, limiting its scope to public flagship universities during the period from 1979 to 1998 (Rizzo & Ehrenberg, 2004), but came up with very different results. While Singell and Stone found no relationship between Pell grant awards and in-state tuition, they did find a positive relationship between Pell and out-of-state tuition. Rizzo and Ehrenberg's findings were exactly the opposite: They found no effect for out-of-state tuition, but did find an impact on in-state tuition. However, like the earlier study, Rizzo and Ehrenberg's methodology suffers from having an imperfect measure of Pell grants. It uses the

maximum Pell grant award available to students each year, rather than the total volume of Pell dollars received in each institution. In addition, the institutions studied included only public flagship universities, so the generalizability to other sectors of higher education is limited.

One more article using IPEDS data (from 2002 through 2007) focused on community colleges. Frederick, Schmidt, and Davis (2012) looked at the relationship between tuition prices and the average federal grant aid received by students at the institution.¹¹ Like the other studies, this one is limited by its short time horizon and by limited measures of institutional financial behavior. The authors did conclude, however, that “state and college officials do not appear to appropriate increases in Federal student aid or Federal funds” (p. 915).

Economists Robert B. Archibald and David H. Feldman (2011) also tested the Bennett Hypothesis in their book *Why Does College Cost So Much?* by applying a Granger test, which attempts to discern causality between two variables by looking at the temporal relationship between the two. In other words, for one variable to cause a change in a second, there should be discernible pattern of change in the first that consistently causes a subsequent change in the second. Their application of the Granger test found no relationship between increases in the authorized maximum Pell award and tuition at public universities, and found an inverse relationship in private universities, i.e., larger increases in the maximum Pell grant were associated with decreases in tuition at private institutions. The authors concluded, “Our results are not encouraging for the conjecture known as the Bennett Hypothesis.”

In a recent analysis that is one of the few empirical analyses of tuition price setting in the for-profit sector, Cellini and Goldin (2012) used data from three states—Florida, Michigan, and Wisconsin—to examine tuition prices in two types of for-profit institutions: those that are accredited by an agency recognized by the U.S. Department of Education, which allows the institution to participate in the federal Title IV programs, and those that are not accredited in this fashion. The authors compared institutions offering similar academic or vocational programs in these two categories (Title IV participating

¹¹ This study included measures of the average state and institutional grants received by students.

and non-Title IV participating) in order to test the hypothesis that at least part of the difference in price could be ascribed to the availability of federal grant aid to students at colleges in the former but not the latter category.

The authors control for a number of other characteristics of the schools, including measures of quality, in order to attempt to isolate the impact of Title IV participation on tuition rates. Even while acknowledging that there may be other unobservable factors that could contribute to these tuition price differences, they do find that the differences in tuition prices map very closely to the average amount of federal grant aid received by students attending the Title IV-participating institutions. They conclude that this “finding is suggestive of the ‘Bennett hypothesis’ of federal aid capture” (p. 22). Like the other studies, this one too has limitations that should cause one to be cautious in interpreting the findings. First, the data are from just three states, which are not necessarily representative of the for-profit sector in the rest of the country. Second, while the authors controlled for some of the factors that distinguish those institutions that participate in the federal Title IV programs and those that do not, there are likely still other unmeasurable characteristics that distinguish these two types of for-profit colleges and their tuition rates.

IV. Summary and Conclusions

As described in the introduction, the best way to characterize the studies that have attempted to measure the veracity of the Bennett Hypothesis is that the findings are ambiguous. Some studies find a relationship between Pell grants and tuition increases; others do not. Some find a relationship in some college sectors but not others, and other studies find exactly the opposite result.

In all of these studies, there are major limitations that restrict our ability to draw hard-and-fast conclusions regarding the Bennett Hypothesis. The first issue is the imprecision with which the researchers measure key variables, including Pell grant awards at the institution, as well as other components of financial aid. Ideally, one would need student-level data across a large number of colleges and universities for multiple years that would provide detailed information about the financial aid offers and awards of both students who applied to the institutions as well as students who enrolled. None of

the studies had data that even came close to containing this level of detail.

A second major problem with all of these studies is one that economists refer to as “omitted variable bias,” or the inability to include in statistical models key predictor or control variables that are related to the outcome of interest. The student-level data noted above would need to be combined with accurate, institution-level information about all of the expense and revenue categories in colleges and universities that help inform the decisions institutions make when they set tuition prices.

Without accurate data it is impossible to accurately model, or even approximate, what the true supply and demand curves are for an institution, or a group of institutions, as shown in Figure 2. Without the ability to discern the supply and demand, it is difficult to determine with any degree of certainty how an external shock to the system—such as an increase in Pell grant awards—would affect the equilibrium point of the higher education market, and thus, what the impact would be on tuition prices and the number of students who enroll.

The reality is that the setting of tuition prices is a multifaceted exercise. At private colleges and universities, the boards of trustees generally set the tuition price each year, and they use a variety of data in making their decision, including:

- Recent years’ financial results;
- Projections of future expenses;
- Projections of future revenue streams, including the availability of state and federal financial aid;
- Estimates of enrollment demand;
- A review of competitors’ past price-setting and enrollment actions and estimates of future such actions; and
- An analysis of the political environment.¹²

Each of these components of the tuition-setting process will carry different weight in a given year; in some years, the actions of competitors may have more influence over the tuition rate that is set. In other years, projections of future expenses may be more of a determinant.

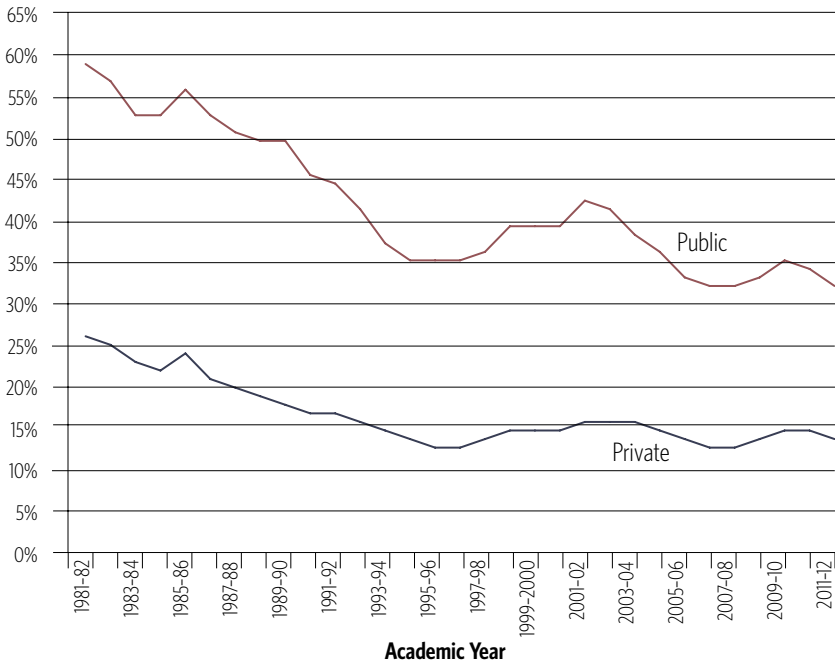
¹² See Clotfelter (1996), Ehrenberg (2000), and Feerrar (2005) for explanations of this process.

Public universities are more mixed as to how tuition rates are established. In some states, the rates are set for all public institutions by the state governing or coordinating board. In others, the legislature is involved, and in still others, individual institutions can establish their own rates (Hearn, Griswold, & Marine, 1996; Lowry, 2001; McGuinness, Epper, & Arredondo, 1994). As is the case at private universities, no matter who has the authority, tuition rates are established based on multiple variables, so the role of one factor—such as the funding for the Pell grant program or what the maximum award will be in the next year—is naturally limited.

Another consideration in understanding the role that federal aid may play in incentivizing institutions to raise tuition prices is to look at what proportion of students' college costs is covered by federal aid. Figure 3 shows the percentages of the average annual combined price of tuition, fees, room, and board at four-year public and private institutions that were covered by the maximum Pell grant award over the last three decades. In 1981, the maximum Pell award of \$1,670 would have covered 58 percent of a student's annual costs at the average-priced public institution and 26 percent of such costs at a private institution. By 2011, these amounts had dropped to 32 percent and 14 percent, respectively. Thus, to have a significant impact on the tuition-setting behavior of colleges and universities, especially in light of all the other competing factors that go into establishing tuition rates, Pell awards would have to increase substantially. Given this pattern, it is not surprising that most of the studies that found a relationship between Pell awards and tuition prices were those using data from the 1980s and early 1990s.

It is also important to remember that increases in Pell awards affect only those students receiving Pell grants; they have no impact on students who do not qualify for the program. The most elite colleges and universities in the country, which also tend to be the most expensive, generally enroll the lowest number of students receiving Pell grants (Carnevale & Rose, 2004; Heller, 2004). Pell grant recipients tend to be enrolled foremost in community colleges, which offer the lowest tuition, and after that, in lower-selectivity (and lower-priced) public institutions. The exception to this pattern may be the for-profit colleges, many of which enroll relatively large numbers of Pell grant awardees.

Figure 3: Maximum Pell grant award amounts as a percentage of average annual tuition, fees, and room-and-board charges at four-year institutions



Source: Author's calculations from College Board (2011), *Trends in College Pricing: 2011* and *Trends in Student Aid: 2011*.

One may question why the studies described in section three focused primarily on the relationship between federal grants and tuition prices, but not federal loans. After all, former secretary Bennett singled out federal loan subsidies as the culprit behind tuition increases. But while loans (both federal and private) are often considered financial aid, their role is very different from that of grants. While grants provide an actual cash discount to the amount that students have to pay to attend college, loans instead have the purpose of allowing students to postpone when they pay for college. And depending upon the loan terms, including interest rates, origination fees, and repayment term, a loan can increase the cost of attending college. An apt analogy can be made between student loans and car loans. Nobody thinks of a car loan as a discount to the price of the car; it simply makes the purchase more affordable by stretching

out the payments over time. A student loan has the same purpose for acquiring a college education.

It is also hard to conclude that increases in borrowing limits under the federal loan programs could have much impact on the increase in tuition prices at the nation’s colleges and universities. Table 3 shows the borrowing limits in the Subsidized Federal Stafford Loan program from 1987—the year then secretary Bennett wrote his op-ed—to 2012. With the exception of the borrowing limit for sophomores, which increased 71 percent over the last 25 years, all of the other limits increased less than 40 percent. And this was during an era when tuition prices increased by more than 300 percent at public and private four-year institutions, as well as at community colleges.

While the Bennett Hypothesis may be intriguing, there is little compelling evidence that it holds true with respect to the price-setting behavior of colleges and universities in the United States. This complex process involves far too many variables for it to be essentially explained by the simplistic notion that tuition-setting boards sit around and say, “Well, Pell grants are going up \$200 next year, so we can raise tuition \$100.” While any change in federal aid may be a very small piece of the puzzle that leads to year-to-year tuition increases, there is scant evidence that it is a major contributing factor.

Table 3: Subsidized Federal Stafford Loan program borrowing limits, 1987 to 2012

	Freshman	Sophomore	Junior	Senior	Aggregate
1/1/87 to 9/30/92	\$2,625	\$2,625	\$4,000	\$4,000	\$17,250
10/1/92 to 6/30/93	\$2,625	\$2,625	\$4,000	\$4,000	\$23,000
7/1/93 to 9/30/93	\$2,625	\$3,500	\$5,500	\$5,500	\$23,000
10/1/93 to 6/30/07	\$2,625	\$3,500	\$5,500	\$5,500	\$23,000
7/1/07 to 6/30/12	\$3,500	\$4,500	\$5,500	\$5,500	\$23,000
7/1/12 to present	\$3,500	\$4,500	\$5,500	\$5,500	\$23,000
Change, 1987 to 2012	33%	71%	38%	38%	33%

Note: Amounts are for dependent students. Aggregate amounts include unsubsidized loans.

Source: FinAid. (n.d.). “Historical Loan Limits.” Retrieved from <http://www.finaid.org/loans/historicallimits.phtml>.

References

- Archibald, R. B., & Feldman, D. H. (2011). *Why does college cost so much?* Oxford, UK: Oxford University Press.
- Bennett, M. J. (1996). *When dreams came true: The GI Bill and the making of modern America*. Washington, DC: Brassey's, Inc.
- Bennett, W. J. (1987, February 18). Our greedy colleges. *The New York Times*, p. A31.
- Bersudskaya, V., & Chang Wei, C. (2011). *Trends in student financing of undergraduate education: Selected years, 1995-96 to 2007-08*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.
- Carnevale, A. P., & Rose, S. J. (2004). Socioeconomic status, race/ethnicity, and selective college admissions. In R. D. Kahlenberg (Ed.), *America's untapped resource: Low-income students in higher education* (pp. 101-156). Washington, DC: Century Foundation Press.
- Cellini, S. R., & Goldin, C. (2012). *Does federal student aid raise tuition? New evidence on for-profit colleges* (Working paper no. 17827). Cambridge, MA: National Bureau of Economic Research.
- Clotfelter, C. T. (1996). *Buying the best: Cost escalation in elite higher education*. Princeton, NJ: Princeton University Press.
- College Board. (2011a). *Trends in college pricing: 2011*. Washington, DC: Author.
- College Board. (2011b). *Trends in student aid: 2011*. Washington, DC: Author.
- Cunningham, A. F., Wellman, J. V., Clinedinst, M. E., Merisotis, J. P. & Carroll, C. D. (2001a). *Study of college costs and prices, 1988-89 to 1997-98, Volume 1*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.
- Cunningham, A. F., Wellman, J. V., Clinedinst, M. E., & Merisotis, J. P. & Carroll, C. D. (2001b). *Study of college costs and prices, 1988-89 to 1997-98, Volume 2: Commissioned papers*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

- Ehrenberg, R. G. (2000). *Tuition rising: Why college costs so much*. Cambridge, MA: Harvard University Press.
- Feerrar, P. W. (2005). *The impact of the recent financial market downturn on private liberal arts colleges* (unpublished doctoral dissertation). University Park, PA: The Pennsylvania State University.
- FinAid. (n.d). Historical loan limits. Retrieved from <http://www.finaid.org/loans/historicallimits.phtml>
- Frederick, A. B., Schmidt, S. J., & Davis, L. S. (2012). Federal policies, state responses, and community college outcomes: Testing an augmented Bennett hypothesis. *Economics of Education Review*, 31(6), 908–917.
- Gardner, L., & Blumenstyk, G. (2012, August 13). At Calif. public colleges, dreams deferred. *The Chronicle of Higher Education*. Retrieved from <http://chronicle.com/article/For-Golden-States-Public/133565/>
- Gillen, A. (2012, February). *Introducing Bennett Hypothesis 2.0*. Washington, DC: Center for College Affordability and Productivity.
- Greenberg, M. (1997). *The GI Bill: The law that changed America*. New York, NY: Lickle Publishing.
- Hearn, J. C., Griswold, C. P., & Marine, G. M. (1996). Region, resources, and reason: A contextual analysis of state tuition and student-aid policies. *Research in Higher Education*, 37(3), 241–278.
- Heller, D. E. (1997). Student price response in higher education: An update to Leslie and Brinkman. *The Journal of Higher Education*, 68(6), 624–659.
- Heller, D. E. (2004). Pell Grant recipients in selective colleges and universities. In R. D. Kahlenberg (Ed.), *America's untapped resource: Low-income students in higher education* (pp. 157–166). Washington, DC: Century Foundation Press.
- Heller, D. E. (2011). Trends in the affordability of public colleges and universities: The contradiction of increasing prices and increasing enrollment. In D. E. Heller (Ed.), *The states and public higher education policy: Affordability, access, and accountability* (2nd ed., pp. 13–36). Baltimore, MD: The Johns Hopkins University Press.
- Jackson, G. A., & Weathersby, G. B. (1975). Individual demand for higher education. *The Journal of Higher Education*, 46(6), 623–652.

- Kane, T. J., & Rouse, C. E. (1995). Labor-market returns to two- and four-year college. *The American Economic Review*, 85(3), 600-614.
- Kim, J. (2010). The effect of prices on postsecondary access: An update to Heller. *Higher Education in Review*, 7, 23-46.
- Knapp, L. G., Kelly-Reid, J. E., & Ginder, S. A. (2012). *Enrollment in postsecondary institutions, fall 2010; financial statistics, fiscal year 2010; and graduation rates, selected cohorts, 2002-07*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.
- Leslie, L. L., & Brinkman, P. T. (1988). *The economic value of higher education*. New York, NY: Macmillan Publishing.
- Levy, F., & Murnane, R. J. (1992). U.S. earnings levels and earnings inequality: A review of recent trends and proposed explanations. *Journal of Economic Literature*, 30, 1333-1381.
- Li, J. (1999). *Estimating the effect of federal financial aid on higher education: A study of Pell grants* (Unpublished doctoral dissertation). Cambridge, MA: Harvard University.
- Lowry, R. C. (2001, October). Governmental structure, trustee selection, and public university prices and spending: Multiple means to similar ends. *American Journal of Political Science*, 45(4), 845-861.
- McGuinness, A. C., Jr., Epper, R. M., & Arredondo, S. (1994). *State post-secondary education structure handbook 1994*. Denver, CO: Education Commission of the States.
- McPherson, M. S., & Schapiro, M. O. (1991). *Keeping college affordable: Government and educational opportunity*. Washington, DC: Brookings Institution Press.
- Morganthau, T., & Nayyar, S. (1996, April 29). Those scary college costs. *Newsweek*, 53-56.
- Mumper, M. (1996). *Removing college price barriers: What government has done and why it hasn't worked*. Albany, NY: State University of New York Press.
- Mumper, M., & Freeman, M. L. (2011). The continuing paradox of public college tuition inflation. In D. E. Heller (Ed.), *The states and public higher education policy: Affordability, access, and accountability* (2nd ed., pp. 37-60). Baltimore, MD: The Johns Hopkins University Press.

- Murnane, R. J., Willett, J. B., & Levy, F. (1995). The growing importance of cognitive skills in wage determination. *Review of Economics and Statistics*, 77(2), 251-266.
- Murphy, K., & Welch, F. (1992). Wages of college graduates. In W. E. Becker & D. R. Lewis (Eds.), *The economics of American higher education* (pp. 121-140). Boston, MA: Kluwer Academic Publishers.
- Rizzo, M. J., & Ehrenberg, R. G. (2004). Resident and nonresident tuition and enrollment at flagship state universities. In C. M. Hoxby (Ed.), *College choices: The economics of where to go, when to go, and how to pay for it* (pp. 303-353). Chicago, IL: The University of Chicago Press.
- Samuelson, P. A. (1976). *Economics* (10th ed.). New York, NY: The McGraw-Hill Book Companies, Inc.
- Singell, L. D., Jr., & Stone, J. A. (2007). For whom the Pell tolls: The response of university tuition to federal grants-in-aid. *Economics of Education Review*, 26(3), 285-295.
- Snyder, T. D., & Dillow, S. A. (2012). *Digest of education statistics 2011*. Retrieved from U.S. Department of Education, National Center for Education Statistics website: <http://nces.ed.gov/programs/digest/>
- State Higher Education Executive Officers. (2012). *State higher education finance FY 2011*. Boulder, CO: Author.
- U.S. Department of Education, National Center for Education Statistics. (2010). Integrated Postsecondary Education Data System (IPEDS) 12-month enrollment survey, 2010 [Data file].
- U.S. Department of Education, Office of Postsecondary Education. (2012). *2010-2011 Federal Pell Grant Program end-of-year report*. Washington, DC: Author.
- Wolfram, G. (2005, January). *Making college more expensive: The unintended consequences of federal tuition aid*. Washington, DC: Cato Institute.
- Zucker, B., & Dawson, R. (2001). *Credits and attainment: Returns to post-secondary education ten years after high school*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.

