The Bennett Hypothesis Turns 30

Scholarly research suggests that federal student aid contributes to increasing university tuition.

Jenna A. Robinson, Ph.D.

"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. In 1978, subsidies became available to a greatly expanded number of students. In 1980, college tuitions began rising year after year at a rate that exceeded inflation. Federal student aid policies do not cause college price inflation, but there is little doubt that they help make it possible."

– William J. Bennett, 1987

Executive Summary

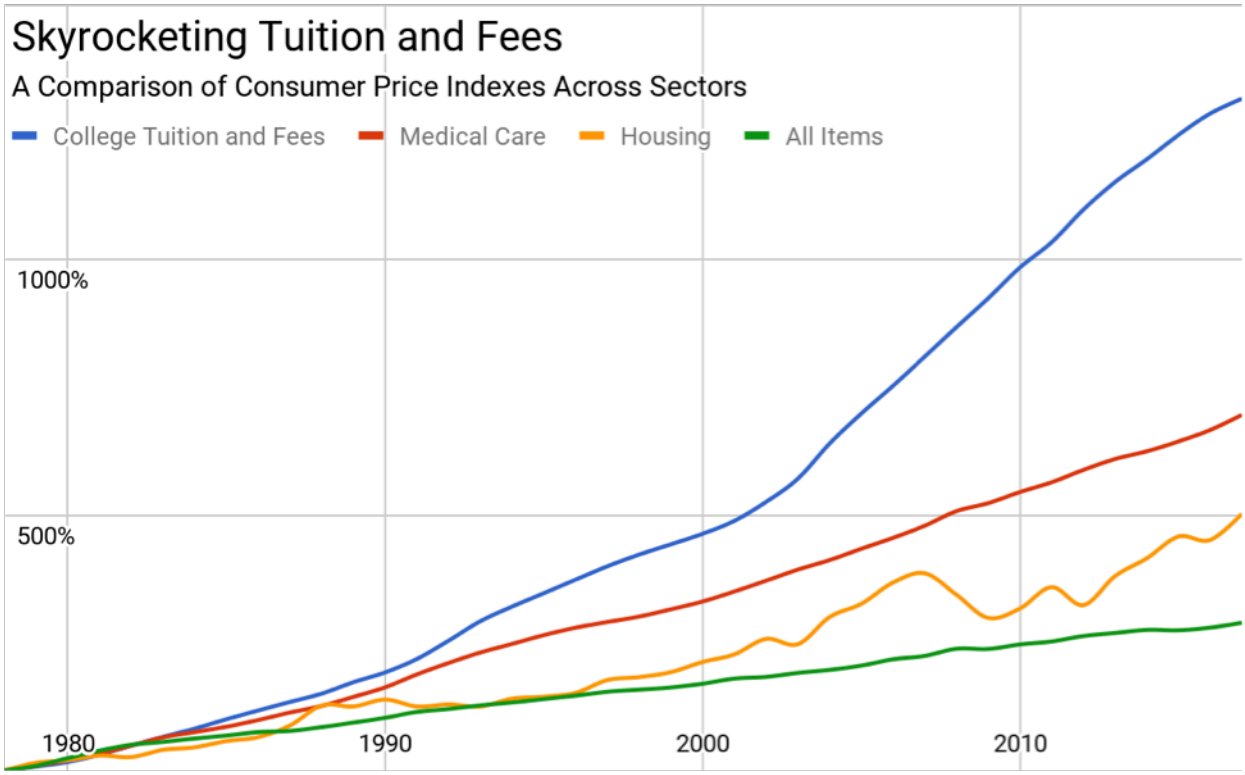
- In 1987, then-secretary of education William J. Bennett penned an article in the *New York Times* entitled "Our Greedy Colleges." In it, he wrote, "If anything, increases in financial aid in recent years have enabled colleges and universities blithely to raise their tuitions, confident that Federal loan subsidies would help cushion the increase."
- This study synthesizes empirical findings from 25 articles published since 1987 in peer-reviewed journals or by respected economic research. institutions. The studies focus on the empirical evidence for Bennett's theory.
- Of the 25 studies surveyed, a majority found some effect of federal subsidies on the price of higher education in at least one segment of the higher education market.
- Based on these findings, we make policy recommendations to help slow the growth of university tuition and fees.

December 2017

THE JAMES G. MARTIN CENTER FOR ACADEMIC RENEWAL

Introduction

For nearly half a century, the cost of higher education has risen faster than the pace of inflation. Between 1978 (the first year in which college tuition had its own CPI category) and the third quarter of 2017, the price of tuition and fees increased by 1,335 percent.[1] This rate of growth exceeded that of medical costs (704 percent),[2] new home construction (511 percent)[3] and the Consumer Price Index for all items (293 percent).[4]



And the number of student borrowers increases every year. In 2015, 68 percent of new graduates left college with student loan debt, up from 57 percent in 2007.[5]

A major contributing factor to this explosion of debt is that the bar to receive a federal loan is exceedingly low. The federal government issues student loans to any student who attends a qualified and accredited institution and meets minimal criteria. Federal loans require no credit check and no collateral. In fact, it is even illegal for colleges to weigh factors such as a student's program of study, borrowing history, or high school academic record to determine loan amounts.

1. United States Bureau of Labor Statistics, CPI-U: U.S. City Average; College Tuition and Fees; 1982-84=100; SA. Raw data. (Washington DC: U.S. Bureau of Labor Statistics, October 15, 2017).
2. United States Bureau of Labor Statistics, CPI-U: U.S. City Average; Medical Care; 1982-84=100; SA. Raw data. (Washington DC: U.S. Bureau of Labor Statistics, October 15, 2017).
3. United States Census Bureau, "Median and Average Sales Prices of New Homes Sold in United States." 2017.
4. United States Bureau of Labor Statistics, CPI-U: U.S. City Average; All Items; 1982-84=100; SA. Raw data. (Washington DC: U.S. Bureau of Labor Statistics, October 15, 2017).
5. The Institute for College Access and Success, *Student Debt and the Class of 2015*, 2016.

The steep increase in the cost of tuition has precipitated myriad downstream problems.

A significant number of students now graduate (or fail to graduate) with debt levels incommensurate with their earning potential. Many students at community colleges, for-profit institutions, and non-selective public and private universities default on their debt or otherwise fail to make progress towards loan repayment. Three years after leaving college, just 41 percent of borrowers have avoided default and paid at least one dollar on their principal balance. At five years, that statistic grows slightly—to 47 percent.[6]

The profligacy does not end when students reach the limit of their borrowing from the government. Almost one-fifth (19%) of the Class of 2015's debt nationally was comprised of nonfederal loans.[7] Many students who use nonfederal loans do so because they have already borrowed the maximum federal loans allowed. These loans often originate from private banks, where rates are higher to account for the significant risk of nonpayment.

This debt has consequences for individual debtors and the national economy. Some borrowers have accumulated very large balances; in 2014, four percent of borrowers had balances over $100,000 and 14 percent had balances over $50,000.[8] Many debtors, regardless of the size of their outstanding balances, report that they have postponed major life events—including marriage, children, and home ownership—because of their high levels of student debt.[9] Their delay, in turn, reduces overall consumption and contributes to the economic stagnation of recent years.

And it is not just young people who are adversely impacted by the high borrowing levels. In 2012, senior citizens held $36 billion in student loan debt,[10] for which the federal government can garnish their Social Security payments. In 2015 alone, the government took $171 million in Social Security payments from older Americans who defaulted on student loans.[11] The majority of that debt (73 percent) is for a child or grandchild's education.

These problems were anticipated as far back as the 1980s. In 1987, then-Secretary of Education William J. Bennett wrote a prescient op-ed in *New York Times*, entitled, "Our Greedy Universities." In the article, he explained, "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."[12]

In other words, federal student aid encourages tuition inflation. The mechanism is not hard to grasp. Private colleges, like all customer-oriented organizations, adjust their prices according to what the market will bear. In simple terms, if an institution's typical student has $1,000 to spend on education, the school will charge tuition of $1,000. If students gain access to another $1,000 for education from grants or loans, the school will raise tuition to $2,000 to capture the full amount.

6. Robert Kelchen, "How Much Did a Coding Error Affect Student Loan Repayment Rates?" *Kelchen on Education* (blog), January 13, 2017.
7. The Institute for College Access and Success, *Student Debt and the Class of 2015*, 2016.
8. Adam Looney and Constantine Yannelis, *A Crisis in Student Loans? How Changes in the Characteristics of Borrowers and in the Institutions They Attended Contributed to Rising Loan Defaults*. Washington, DC: Brookings Institution, 2015.
9. AICPA, "One-Third of College Students Say They'll Live at Home Post-Graduation Due to Loan Debt," Nov. 12, 2015.
10. Meta Brown, Andrew Haughwout, Donghoon Lee, Maricar Mabutas and Wilbert van der Klaauw. "Grading Student Loans." *Liberty Street Economics* (blog), March 5, 2012.
11. Government Accountability Office, *Social Security Offsets: Improvements to Program Design Could Better Assist Older Student Loan Borrowers with Obtaining Permitted Relief*, December 2016.
12. William J. Bennett, "Our Greedy Colleges," *The New York Times*, February 18, 1987.

TYPES OF AID

Loans must be repaid. Grants are free gifts.

Federal Loans

- **Direct/Stafford Loans:** Money loaned from the federal government to the student. Approximately $95.9 billion was awarded in loans for FY 2015.
  - **Subsidized Loans:** Loans available to undergraduate students at a favorable interest rate. The federal government pays the interest on payments while the student attends school and for a few months upon graduation. Only students *with displayed financial need* can qualify for subsidized loans, and loans can only be received for 150% of the time it should take to graduate from the academic program (e.g., six years of loans for attending a four-year university). Students cannot accrue more than $23,000 in subsidized Stafford Loans throughout their undergraduate studies.
  - **Unsubsidized Loans:** The federal government does not cover the interest on these loans for any grace period. Students *do not need to demonstrate financial need* and can receive these loans for as many years as they are enrolled. These loans are available to undergraduate and graduate students alike. In total, undergraduate and graduate Stafford Loans cannot exceed $138,500.
- **Direct PLUS Loans:** Part B of Title IV of the Higher Education Act authorizes the $21 billion PLUS loan program, which provides federal loans to graduate students and the parents of undergraduate students.
  - **Parent PLUS Loans:** Parents of undergraduate students are able to borrow *up to the cost of attendance* at a given college. During the 2011–2012 academic year, the PLUS loan program provided 879,000 parents of undergraduate students with an average of $12,575. There is no limit (either in number of years or aggregate dollars) on how much a parent can borrow, and the loans are available in addition to federal loans that are already available to the students themselves.
  - **Graduate PLUS Loans:** The Graduate PLUS loan program, open to graduate students who take out loans to finance graduate school, enables students to borrow *up to the full cost of attendance* at a given school, less any other aid received. During the 2011–2012 academic year, the PLUS loan program provided 360,000 graduate students with an average loan of $19,958.

Federal Perkins Loans: Undergraduate students can borrow up to $5,500 per year ($27,000 total) directly from the university. Graduate students can borrow up to $8000 a year ($60,000 total). Money is only available to students with exceptional financial need. In FY 2015, the federal government awarded approximately $1.2 billion to the universities to distribute as loans.

Federal Grants

- **Pell Grant:** The most common grant program from the federal government. Pell Grants are awarded to undergraduates with a clear financial need. The amount awarded is contingent upon the extent of financial need, the cost of attendance, and status as a full-time or part-time student. The maximum award for the 2017-18 school year is $5,920. All students who demonstrate financial need and meet the eligibility requirements are awarded with Pell grants. Pell grants can be received for a maximum of 12 semesters. Approximately $29.9 billion in Pell Grants were awarded in FY 2015.
- **Federal Supplemental Educational Opportunity Grant (FSEOG):** Only available for undergraduate students. Each school is awarded a specified amount of funds from the federal government to be spent on student aid. The schools awards the grants to students with significant financial need. FSEOGs are first-come, first-serve: when the funds run out, no more grants are available for the year. Awards vary between $100 and $4,000 annually. Approximately $730 million were appropriated as FSEOGs in FY 2015.
- **TEACH Grant:** Undergraduates and graduate students are eligible for TEACH Grants if they pursue a career in teaching. Recipients can be awarded up to $4,000 a year if they agree to teach in a “high need field” and/or serve low-income students for four years within eight years of graduating. Potential recipients must display financial need, and they must meet GPA and standardized test requirements. About $91 million awarded in FY 2015.
- **Iraq and Afghanistan Service Grants:** Available for students whose parent or guardian died in military service in Iraq or Afghanistan and whose family income exceeds the limit to be eligible for Pell Grants. Students must meet remaining Pell Grant requirements, and the awarded amount is equivalent to that of a Pell Grant.

At the time Bennett formulated his hypothesis, very little data existed about the effects of federal spending on higher education. But Bennett's intuition was sound. Writing for the National Bureau of Economic Research in 2004, Bridget Terry Long examined evidence that states and institutions change their policies in response to spending on federal financial aid:

> In fact, many states did react to the introduction of the tax credits by considering ways to capture the federal resources available through the new tax credits. In a report from California's Legislative Analyst's Office, Turnage (1998)…suggests increasing fees at public colleges in California. He asserts that the tax credits would offset the increase for richer students while financial aid could be given to offset the effect for low-income students. According to his calculations, an increase from $360 to $1,000 at the community colleges would increase funding to these schools by over $100 million annually without affecting the California state budget.

It may be that state systems and private colleges indeed raised tuitions to capture federal money through tax credits, as suggested by Turnage in the above passage. In the preceding chart, note how there was a sharp increase in the rate of growth of student debt in the early "aughts."

Economist Howard R. Bowen laid the foundation for Bennett's understanding of the relationship between aid and tuition in 1980. He explained his his book, *Costs of Higher Education*, a revenue theory of cost for university spending.

He wrote:

> ...at any given time, the unit cost of education is determined by the amount of revenues currently available for education relative to enrollment. The statement is more than a tautology, as it expresses the fundamental fact that unit cost [i.e., the cost of education] is determined by hard dollars of revenue and only indirectly and distantly by considerations of need, technology, efficiency, and market wages and prices.[13]

His theory can be summarized into these four rules:

1. The main goals of higher education institutions are excellence, prestige, and influence.
2. There is virtually no limit to the amount of money colleges and universities can spend to increase these qualitative and reputational improvements. (e.g., the spending can go to more administrators, better buildings, employment of "star" scholars and researchers, impressive athletics programs, or even expensive marketing or "branding" efforts.)
3. Each institution raises as much money as it can—including in the form of tuition.
4. Because there is no profit that is disbursed to shareholders, as there would be with private corporations, and therefore no need to hold down costs, the institution spends all the money it raises.

In short, institutions have strong incentives to capture increases in federal student aid in order to spend more on "prestige." Robert Martin further explored the relationship between Bennett's hypothesis and Bowen's observations in a paper for the Martin Center in 2009, "The Revenue-to-Cost Spiral in Higher Education."[14]

13. Howard R. Bowen, *Costs of Higher Education: How Much Do Colleges and Universities Spend Per Student and How Much Should They Spend?* (San Francisco, CA: Jossey-Bass Inc., 1980), 19.

14. Robert Martin, *The Revenue–to–Cost Spiral in Higher Education*, (Raleigh, NC: The James G. Martin Center for Academic Renewal, 2009).

Despite the strong theoretical basis for Bennett's hypothesis, several current practices may complicate the relationship between loans and tuition. In 2012, Andrew Gillen proposed an updated version of the hypothesis, which incorporates Bowen's rule, in a paper for the Center for College Affordability and Productivity. He suggested three key refinements to Bennett's theory.

1. Different types of aid affect tuition prices differently.
2. Tuition caps and price discrimination weaken the link between aid and tuition.
3. Scholars must examine both *dynamic* and *static* considerations when quantifying the relationship between aid and tuition.

In the thirty years since Bennett's famous editorial, 25 empirical analyses have been performed examining his eponymous theory. This paper summarizes those findings and makes evidence-based policy recommendations to address the problem of tuition inflation.

Findings

A previous review of available literature on the Bennett Hypothesis, conducted in 2003,[15] found that estimates of the impact of federal aid on public tuition level range from negligible to as much as 50 percent of the increase in aid. Since then, further studies have analyzed fourteen additional years of data and significantly enhanced our understanding of the effects of financial aid on tuition. A study by Donald Heller in 2013 for ACE reviewed eight studies on the Bennett Hypothesis published between 1991 and 2012 and concluded that the findings were limited and ambiguous.[16]

This Martin Center study adds to the literature by incorporating evidence both for and against the Bennett Hypothesis and weighing the evidence. It synthesizes findings from 25 articles published since 1987 in peer reviewed journals or respected economic research institutions or universities. The studies focus on the empirical evidence for Bennett's hypothesis that federal financial aid drives up the price of college and university tuition. They are listed at the end of this paper.

Two important studies that came out earlier this year aided our efforts greatly. Mark J. Warshawsky and Ross Marchand,[17] writing for the Mercatus Center at George Mason University, did an extensive review of the literature in support of the Bennett Hypothesis. Additionally, the Heritage Foundation included a discussion of the hypothesis in its paper "Private Lending: The Way to Reduce Students' College Costs and Protect America's Taxpayers."[18]

Of the 25 studies surveyed, seven found no Bennett effect whatsoever. Three of the seven were among the earliest studies in the sample, and thus relied on the smallest sample sizes in terms of number of years analyzed. Another of the seven found no effect between increases in the maximum Pell grant awarded and increases in tuition. But this is to be expected since the maximum Pell grant award is already considerably lower than tuition at most public and private four-year institutions.

15. Michael T. Rizzo and Ronald G. Ehrenberg, "Resident and Nonresident Tuition and Enrollment at Flagship State Universities." In *College Choices: The Economics of Where to Go, When to Go, and How to Pay for It*, edited by Caroline Hoxby. A National Bureau of Economic Research Report (Chicago: University of Chicago Press, 2004).
16. Donald Heller, *Does Federal Financial Aid Drive Up College Prices?* (Washington, DC: American Council on Education, April 2013).
17. Mark J. Warshawsky and Ross Marchand, *Dysfunctions in the Federal Financing of Higher Education* (Washington, DC: Mercatus Center, 2017).
18. Mary Clare Reim, *Private Lending: The Way to Reduce Students' College Costs and Protect America's Taxpayers* (Washington, DC: Heritage Foundation, 2017).

Fourteen studies, a clear majority, found some positive effect of federal subsidies on the price of higher education in at least one segment of the higher education market.

The most recent study to find no Bennett effect (Kelchen 2017) analyzed the relationship between increases in federal student loan limits and law school tuition. The author suggests that the lack of correlation could be because students shifted from private loans to PLUS loans and thus already had access for loans up to the full cost of attendance.

Fourteen studies, a clear majority, found some positive effect of federal subsidies on the price of higher education in at least one segment of the higher education market. Many of these found support for the Bennett Hypothesis across all segments of the market—public, private, and for-profit.

The effects range considerably in size and explanatory power. For example, Frederick et al (2012) find "at most very limited evidence in support of an expanded Bennett hypothesis" in community colleges while Cellini and Goldin (2012) find that differences in tuition prices at for-profit institutions map very closely to the average amount of federal grant aid received by students at the institutions.

In *The Student Aid Game* (1998), McPherson and Schapiro show that public colleges and universities increase tuition by $50 for every $100 in aid. Lucca et al (2015) say it's more. They find "a pass-through effect on tuition of changes in subsidized loan maximums of about 60 cents on the dollar."

One of the studies that found a positive effect, Curs and Dar (2010), also found a negative effect: between merit-based state financial aid and listed tuition prices at public and private institutions. They posited that this finding was a result of institutions competing to attract high-performers and academic superstars—an effect that is not generalizable to other types of aid.

The remaining four studies found negative effects.

In some cases, the findings were contradictory. For example, some studies found that tuition is more sensitive to federal grant aid than federal loan aid while others presented the opposite finding. But taken together, the research suggests that it is likely that federal financial aid does enable or contribute to increases in tuition, probably to a large degree.

Across all types of institutions, more studies found that loans contributed to increases in tuition than did grants. This is likely because the maximum Pell grant is less than the published price of tuition at almost all public and private four-year institutions. The effect was more pronounced at expensive schools (such as private four-year institutions) than at affordable ones (such as public community colleges).

As Gillen noted in his 2012 paper, the effect was also more marked at for-profit institutions than at public and private nonprofit institutions. At public institutions, this is due to tuition caps and strong political pressure to keep tuition low. At private nonprofit institutions, it is due to the common practice of price discrimination. (Price discrimination is the practice of charging students different prices based on their ability and willingness to pay.)

Table 1 shows the correlations demonstrated by 24 recent scholarly investigations of the Bennett hypothesis. (The citation count is indication of an article's academic influence.)

Study	Positive Correlation	No Correlation	Negative Correlation	Citations
Acosta 2001, working paper	Federal grant, loan aid ➤ tuition at private four-year institutions. Federal grant aid ➤ tuition prices at public four-year institutions.	Federal loan aid ➤ tuition at public four-year institutions		10
Archibald and Feldman 2011, Oxford University Press		Increases in the authorized maximum Pell award ➤ tuition at public universities	Increases in the authorized maximum Pell award ➤ tuition at private universities	270
Cellini and Goldin 2014, American Economic Journal	Grant and loan aid ➤ tuition prices at for-profit 2- and 4-year institutions			11
Cunningham et al 2001, National Center for Education Statistics		Federal grants and loans ➤ changes in tuition at public and private not-for profit sector		6
Curs and Dar 2010, working paper	Need-based state financial aid ➤ net tuition price at public and private institutions		Merit-based state financial aid ➤ listed tuition price at public and private institutions	7
Epple et al 2013, NBER working paper	Federal aid ➤ tuition revenue at private universities (by means of reduction in institutional aid)			32
Frederick et al 2012, Economics of Education Review		Federal funding for community colleges ➤ state appropriations		9
Gillen 2012, CCAP policy paper	Dollar limits on federal loans ➤ tuition prices			18
Government Accountability Office 2011		Increase in the federal student loan limit for first- and second-year students ➤ tuition prices		3
Gordon and Hedlund 2016, working paper	Federal loans ➤ tuition			13
Harvey et al 1998, National Commission on the Cost of Higher Education		Availability of federal grants and loans ➤ tuition prices		18
Inglet 2016, doctoral dissertation	Federal financial aid spending ➤ public and private college sticker prices			0

Study	Positive Correlation	No Correlation	Negative Correlation	Citations
Kargar and Mann 2017, working paper			Loan eligibility limitations ➤ tuition prices	1
Kelchen 2017, working paper		Federal PLUS loan limits ➤ law school tuition		
Lau 2014, job market paper	Federal grants and loans ➤ tuition at four-year and two-year institutions			9
Li 1999, doctoral dissertation	Pell grant awards ➤ tuition prices at public and private four-year institutions			9
Long 2004, Journal of Human Resources	Georgia HOPE Scholarship ➤ tuition at public and private four-year institutions			164
Long 2004, NBER		Federal Hope and Lifelong Learning Credits ➤ state appropriations for colleges and universities		146
Lucca et al 2015, Federal Reserve Bank of New York	Federal grants and loans ➤ tuition prices at public and private universities and vocational schools			37
McPherson and Schapiro 1991, Brookings Institution	Federal aid revenues ➤ tuition revenues at public universities	Federal aid revenues ➤ tuition revenues at private universities		326
Rizzo and Ehrenberg 2004, NBER	Maximum available Pell award ➤ in-state tuition prices at public universities	Maximum available Pell awards ➤ out-of-state tuition prices at public universities		165
Singell and Stone 2007, Economics of Education Review	Average size of Pell awards ➤ out-of-state tuition at public universities	Average size of Pell awards ➤ in-state tuition at public universities		79
Turner, L. 2017, working paper			Size of Pell grants ➤ amount of institutional aid	0
Turner, N. 2010, working paper			Tax-based federal education aid ➤ amount of institutional aid	61
Welch 2015, doctoral dissertation		State-funded merit scholarships ➤ tuition prices		0

Implications

The evidence in favor of the Bennett Hypothesis is compelling. It is most likely that federal financial aid significantly increases the cost of college, possibly across all sectors. Scholars should continue to study the issue to further refine federal, state, and institutional policy.

In light of this evidence, the federal government and individual states should begin to alter their financial aid policies now in order to:

1. Put downward pressure on tuition prices;
2. Focus aid on universities and students where there is genuine need so that federal money is not simply an addition or supplement to money that is already available, (e.g. lending to wealthy students or institutions);
3. End or minimize subsidies that are artificially increasing demand for higher education and/or tolerance for higher prices.

The specific policies that can accomplish these aims are:

- **Eliminate Graduate and Parent PLUS loans: These are the types of loans most likely to drive tuition increases.**
  - Undergraduate and graduate students already have access to up to $138,500 in federal loans through the Stafford Loan program. Students enrolled in school to become healthcare professionals can borrow up to $224,000. The federal government should not encourage or enable borrowing above those already generous amounts.
  - Loans to parents are even less circumscribed. There is no limit on how much a parent can borrow. These loans are available to parents of students who have already maxed out their own federal borrowing. The availability of such loans has resulted in families incurring substantial debt, while failing to ease the cost of college over time.
- **Focus on Pell grants (instead of loans).**
  - Going forward, the Department of Education's main focus should be on Pell grants to the nation's neediest students. Such grants, which are limited in scope and size and meet a true need, are the least likely to encourage colleges and universities to raise tuition. Loans should be of secondary importance.

The evidence in favor of the Bennett Hypothesis is compelling. It is most likely that federal financial aid significantly increases the cost of college, possibly across all sectors.

- **Change the student aid eligibility formula.**
    - Use the Median Cost of College instead of the Cost of Attendance (COA) at individual institutions to calculate financial need. Using COA discourages students from choosing less expensive schools since the current "need" formula awards students more money when they attend institutions with higher tuition.
- **Make private student loans subject to bankruptcy laws.**
    - Making private student loans dischargeable in bankruptcy would give private lenders incentives to tighten lending standards and lower the maximum loan amounts.
- **Cap the growth of tuition and fees at public colleges and universities.**
    - Public colleges and universities should limit the growth in tuition and fees to the rate of inflation.
- **End subsidies for federal student loans.**
    - Lucca et al (2015) found that subsidized loans drive up tuition to a far greater degree than other forms of student aid.
- **Improve students' understanding of student loan borrowing and debt obligations.**
    - One possible solution is for other states to adopt a version of a 2015 Indiana law (H. 1042) requiring postsecondary educational institutions that enroll students who receive state financial aid to annually provide each student with certain information concerning the student's education loans.
- **Demand that institutions have "skin in the game."**
    - Institutions should have a share in the credit risk of every student who takes out a loan to attend the institution. This would put pressure on universities to keep tuition low and offset some of the artificial pressure on demand for higher education.

Conclusion

College tuition, student debt, and university spending have increased almost unchecked for almost half a century. Students, parents, faculty, and the American economy have suffered as a consequence.

The Bennett Hypothesis, with some modern nuances, explains at least part of the problem and directs decision makers at the state, university, and federal levels to solutions that will work to slow tuition increases and stem the tide of runaway student debt and profligate university spending.

Congress, state legislators, and university administrators must act to make college affordable and accessible and to head off the looming student loan crisis.

Studies Included in the Analysis

Acosta, Rebecca J. "How Do Colleges Respond to Changes in Federal Student Aid?" Working paper, Department of Economics, University of California at Los Angeles, October 2001.

Archibald, R. B., & Feldman, D. H. *Why Does College Cost So Much?* Oxford: Oxford University Press, 2011.

Cellini, Stephanie Riegg, and Claudia Goldin. "Does Federal Student Aid Raise Tuition? New Evidence on For-Profit Colleges." *American Economic Journal: Economic Policy* 6, no. 4 (2014): 174–206.

Cunningham, Alisa F., Jane V. Wellman, Melissa E. Clinedinst, and Jamie P. Merisotis.(Project Officer: C. Dennis Carroll). Study of College Costs and Prices, 1988–89 to 1997–98, Volume 1. National Center for Education Statistics 2002–157. Washington, DC: 2001.

Curs, Bradley R., and Luciana Dar. "Do Institutions Respond Asymmetrically to Changes in State Need- and Merit-Based Aid?" November 1, 2010.

Epple, Dennis, Richard Romano, Sinan Sarpça, and Holger Sieg. "The U.S. Market for Higher Education: A General Equilibrium Analysis of State and Private Colleges and Public Funding Policies," NBER Working Paper No. 19298. Cambridge MA: National Bureau of Economic Research, August 2013.

Frederick, Allison B. Stephen J. Schmidt, and Lewis S. Davis. "Federal Policies, State Responses, and Community College Outcomes: Testing an Augmented Bennett Hypothesis," *Economics of Education Review* 31, no. 6, December 2012: 908-917.

Gillen, Andrew. *Introducing Bennett Hypothesis 2.0*. Policy paper, Center for College Affordability and Productivity. Washington, DC, 2012.

Gordon, Grey and Aaron Hedlund. "Accounting for the Rise in College Tuition." Working Paper #2015-015, Center for Applied Economics and Policy Research, Department of Economics, Indiana University at Bloomington, 2015.

Government Accountability Office. *Federal Student Loans: Patterns in Tuition, Enrollment, and Federal Stafford Loan Borrowing Up to the 2007-08 Loan Limit Increase*, May 25, 2011.

Harvey, James, Roger M. Williams, Rita J. Kirshstein, Amy Smith O'Malley, Jane V. Wellman. *Straight Talk about College Costs and Prices: Report of the National Commission on the Cost of Higher Education*. National Commission on the Cost of Higher Education, February 1998.

Inglet, Jerry. "Testing the Bennett Hypothesis: Examining the Relationship between College Sticker Prices and Total Federal Financial Aid Spending on Higher Education." Doctoral dissertation, D'Youville College, Buffalo, NY, 2016.

Kargar, Mahyar, and William Mann. "Financial Aid and College Pricing: Estimates from the PLUS Program" August 7, 2017.

Kelchen, Robert, *An Empirical Examination of the Bennett Hypothesis in Law School Prices*. AccessLex Institute Research Paper No. 17-09, November 8, 2017.

Lau, Christopher V. "The Incidence of Federal Subsidies in For-profit Higher Education," Working Paper, Department of Economics, Northwestern University, 2014.

Li, J. "Estimating the Effect of Federal Financial Aid on Higher Education: A Study of Pell Grants." Doctoral dissertation, Harvard University, 1999.

Long, Bridget Terry. "How Do Financial Aid Policies Affect Colleges? The Institutional Impact of the Georgia HOPE Scholarship." *Journal of Human Resources* 39, no. 4 (2004): 1045-066. doi:10.2307/3559038.

_____.The Impact of Federal Tax Credits for Higher Education Expenses. In *College Choices: The Economics of Where to Go, When to Go, and How to Pay For It*. Edited by Caroline Hoxby. A National Bureau of Economic Research Report. Chicago: University of Chicago, 2004.

Lucca, David O., Taylor Nadauld, and Karen Shen. *Credit Supply and the Rise in College Tuition: Evidence from the Expansion in Federal Student Aid Programs*. Federal Reserve Bank of New York. Staff Report No. 733, 2015.

McPherson, M. S., & Schapiro, M. O. *Keeping College Affordable: Government and Educational Opportunity*. Washington, DC: Brookings Institution Press, 1991.

Rizzo, Michael T., and Ronald G. Ehrenberg. Resident and Nonresident Tuition and Enrollment at Flagship State Universities. In *College Choices: The Economics of Where to Go, When to Go, and How to Pay for It*. Edited by Caroline Hoxby. "A National Bureau of Economic Research Report." Chicago: University of Chicago, 2004.

Singell Jr., L.D. and J.A. Stone. "For Whom the Pell Tolls: The Response of University Tuition to Federal Grants-in-aid," *Economics of Education Review* 26 (2007), 285-295.

Turner, Lesley J. "The Economic Incidence of Federal Student Grant Aid." Working paper, University of Maryland, College Park, MD, 2017.

Turner, Nick. "Who Benefits From Student Aid? The Economic Incidence of Tax-Based Federal Student Aid." UC San Diego: Department of Economics, 2010.

Welch, Jilleah Gayle. "Three Essays on the Economics of Higher Education: How Students and Colleges Respond to Financial Aid Programs." Doctoral dissertation, University of Tennessee, Knoxville, TN., 2015.

About the Author

Jenna A.Robinson is the president of the Martin Center, where she has worked since 2007. Robinson graduated from N.C. State University in 2003 with a major in political science and French. She received her Ph.D. in political science from UNC-Chapel Hill in 2012. She serves as a member of the board of Classical Liberals of the Carolinas.

Acknowledgments

I'd like to thank Adam C. Smith of Johnson & Wales University for his helpful comments, Martin Center interns J.T. Klimek and Joseph Warta for their attention to detail.

I'd also like to thank the many policy experts and scholars who have kept up with new research on the Bennett Hypothesis in their various blogs and publications, including Robert Kelchen of Seton Hall University, Neal McCluskey at the Cato Institute, and myriad writers at the Heritage Foundation and the American Enterprise Institute. Without their helpful compilations, the initial research for this report would have been much more difficult.

ISSN 1935-3510

353 E. Six Forks Road Suite 200
Raleigh, NC 27609

919.828.1400
Fax: 919.828.7455

www.jamesgmartin.center

THE JAMES G.
MARTIN CENTER
FOR ACADEMIC RENEWAL