Research Report

Causes of faster-than-inflation increases in college tuition

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Executive Summary

This report presents a predictive model of tuition increases by analyzing the relationship between college expenditures and revenues and increases in the price of higher education. Two quantitative models are developed, one for public colleges and universities and one for private colleges and universities. Given these models, it becomes possible to explain why college tuition rates increase faster than the Consumer Price Index (CPI).

The key findings of this report are as follows:

1) The practice of tuition discounting, in which a college awards financial aid from its own funds, is responsible for 27% to 32% of the increase in college tuition. On an absolute scale, tuition discounting accounts for 2 to 3 percentage points of the college tuition inflation rate. Tuition charges would be 22% to 25% lower without tuition discounting, but lower income families would be unable to afford to pay for a college education.

2) Volatility in tuition rates depends on the percentage of total revenues derived from tuition and fees. For each 1% decline in non-tuition revenue, gross tuition revenue must increase by 1.3% at private colleges and 4.3% at public colleges. Public college tuition changes are much more volatile because it depends on non-tuition sources of revenue to a greater extent than private colleges.

3) Increases in public college tuition are strongly correlated with the declines in state support of higher education.

4) The most significant contributor to tuition increases at public and private colleges is the cost of instruction. It accounts for a quarter of the tuition increase at public colleges and a third of the increase at private colleges.

5) Cutting the cost of instruction by 1% will reduce tuition rates by 0.6% at private colleges and 1.7% at public colleges.

6) Increases in private gifts and grants and endowment income were significantly responsible for the temporary slowing of tuition increases at private colleges in the mid to late 1990s.

7) During the end of a recession and the recovery that follows, tuition rates will increase substantially, particularly at public colleges and universities.

8) The relatively moderate level of increases in federal government appropriations, grants, and contracts is responsible for 11.7% of the increase in college tuition.

9) Research expenditures have less of an impact on tuition increases than financial aid.

Introduction

College tuition increases are a topic of concern for students, parents, educators and legislators. The August 8, 2002 issue of USA Today reports, for example, that students at four-year public colleges are facing double-digit increases in tuition and fees, with some schools increasing rates by as much as 26%. College tuition has consistently increased faster than disposable family income. Every year it becomes more difficult for families to send their children to college.

Not only are college tuition rates increasing, but also the percentage of students receiving financial aid and the average amount of financial aid. This poses a serious problem for colleges, because eventually they'll reach the point of diminishing returns. When 75% of a college's student population is receiving financial aid, the college nets only 25 cents of each $1 increase in college tuition. Already there are a handful of colleges where 85% or more of their students need financial aid.

Unfortunately, nobody seems to be able to explain why college tuition increases faster than inflation. Even university presidents are hard-pressed to explain the opaque relationship between a college's finances and the price it charges for a higher education. The report of the National Commission on the Cost of Higher Education, Straight Talk About College Costs and Prices (January 21, 1998) stated that

> "Quite simply, the available data on higher education expenditures and revenues make it difficult to ascertain direct relationships among cost drivers and increases in the price of higher education."

Without a fundamental understanding of the causes of tuition increases, it is difficult to identify the most effective means for reducing the rate of college tuition increases.

To help address this problem, this report presents a quantitative linear model that relates college expenditure and revenue streams and other factors with the rate of tuition increases. This model also identifies the sensitivity of college tuition to increases or reductions in each independent variable. This will hopefully allow colleges to systematically focus budget cuts where they will be most effective in moderating tuition increases.

Relating College Cost Drivers and Tuition Increases

This model is based on six years of college cost and enrollment data, as published by the National Center for Education Statistics (NCES) in the annual Digest of Education Statistics on the nces.ed.gov web site. The data is summarized in tables 203, 331, 332, 333, 343, 345, 346, 347, 349, 352 and 358. Some additional data was obtained from the National Postsecondary Student Aid Study (NPSAS), which is conducted by NCES every three years.

The NCES data provides 10 primary categories for current-fund revenue and 12 primary categories for current-fund expenditures for all Title IV institutions.

The revenue categories are as follows:

- Tuition and Fees. This includes payments for instruction and other services, equipment, books, and goods the university provides to the students.

- Federal Government. This includes appropriations, unrestricted grants and contracts, restricted grants and contracts, and independent operations (Federally Funded Research and Development Centers). Federally-funded education loans and grants are not included in this category.

- State Governments. This includes appropriations, unrestricted grants and contracts, and restricted grants and contracts. State-funded education loans and grants are not included in this category.

- Local Governments. This includes appropriations, unrestricted grants and contracts, and restricted grants and contracts. Local government funded education loans and grants are not included in this category.

- Private Gifts, Grants, and Contracts. This includes both restricted and unrestricted grants and contracts from non-government sources, such as private benefactors.

- Endowment Income. A university's endowment is a restricted trust established by private benefactors. The university is not allowed to spend the principal of the trust, only the income. The benefactor may further restrict the purposes for which the income may be spent (e.g., an endowed faculty chair). Often the university will add a portion of the income back to the endowment as a hedge against inflation, using it to prevent the erosion of the constant-dollar value of the principal. Endowment income includes both restricted and unrestricted funds.

- Sales and Services from Educational Activities. Sales and services include revenues derived from the sales of goods or services that are incidental to the conduct of instruction, research, or public service. Examples include university presses and scientific and literary publications.

- Sales and Services from Auxiliary Enterprises.

- Sales and Services from University Hospitals.

- Other Sources of Income.

The expenditure categories are as follows:

- Instruction. This includes primarily expenditures for instructional divisions of higher education institutions. It includes expenditures for both credit and noncredit activities. It excludes expenditures for academic administration where the primary function is administration (e.g., academic deans). Those expenditures are included in the Academic Support category below.

- Research. Part of the mission of a university is to conduct research in the sciences and other fields. It helps enhance the quality of student instruction, and is a key component of the education of graduate students. It also benefits society at large, by generating new inventions, technologies, and knowledge, and by spinning off new companies that contribute to the economy. This category includes expenditures for the research divisions of higher education institutions.

- <u>Public Service</u>. This category includes expenditures for public service activities of colleges and universities.

- <u>Academic Support</u>. This comprises college expenditures for support services that are integral to the university's primary mission. It includes expenditures for university libraries, audio/visual services, academic computing, academic administration, personnel development, course and curriculum development, and similar expenses.

- <u>Student Services</u>. This comprises expenditures for staff providing guidance, health, psychological services, social work, counseling, and other support to students.

- <u>Institutional Support</u>. This comprises day-to-day operational support for colleges, excluding expenditures for physical plant operations. It includes general administrative services, executive direction and planning, legal and fiscal operations, and community relations.

- <u>Operation and Maintenance of Physical Plant</u>. This comprises salary, benefits, supplies, and contractual fees for supervision of operations and maintenance, operating buildings (heating, lighting, ventilation, repair, and replacement), care and upkeep of grounds and equipment, vehicle operations and maintenance (other than student transportation), security, and other operations and maintenance services.

- <u>Financial Aid</u>. This includes restricted and unrestricted scholarships and fellowships awarded from institutional funds. It includes funds given to students in the form of tuition or fee remissions. Financial aid from federal, state and other non-university sources is not included in this category, but instead is implicit in the Tuition and Fees revenue category.

- <u>Mandatory Transfers</u>. This comprises transfers that are required to fulfill a binding legal obligation of the institution, including debt service relating to academic and institutional buildings.

- <u>Auxiliary Enterprises</u>. This comprises essentially self-supporting operations that furnish a service to students, faculty, or staff, and which charge fees that are directly related to (although not necessarily equal to) the cost of the service. Examples include residence halls, food services, college bookstores, and intramural and intercollegiate athletics.

- <u>Hospitals</u>.

- <u>Independent Operations</u>. This comprises independent self-supporting activities under the control of a college or university, such as Federally-Funded Research and Development Centers (FFRDC).

Several additional statistical categories were identified:

- <u>Retained Revenues</u>. Total current-fund revenues consistently exceeded total current-fund expenditures by approximately 3.3%. The difference is presumably added to the endowment as a hedge against inflation. Retained Revenues is therefore defined to be the difference between total current-fund revenues and total current-fund expenditures.

- <u>FTE Fall Enrollment</u>. This is the full-time-equivalent enrollment. It is the enrollment of full-time students, plus the full-time equivalent of part-time students. This enables the

calculation of the per-student impact of changes in the Tuition and Fees category. For example, if the Tuition and Fees revenue increases by 8.0%, but FTE enrollment increases by 2.5%, tuition rates will have increased by 5.4%.

- **Percentage of Students Receiving Aid**. This is the percentage of the student population that receives financial aid from the school's institutional funds. This percentage has been increasing.

- **Average Aid Percentage**. Among students receiving financial aid, this is the average subsidy percentage. It is the average ratio of aid received to tuition and required fees, for students receiving the school's institutional aid. It has been declining, as schools increase the gaps between financial aid and financial need.

Capital expenditures for new facilities are not included in this model.

For the purpose of modeling the relationship between these categories, the Tuition and Fees category was treated as a dependent variable and the other categories as independent variables.

The basic form of the model is as a weighted linear model, with the percentage distribution of expenditure categories treated as positive weights on the rate of change of the corresponding category, and the percentage distribution of income categories treated as negative weights. This permits one to calculate the new value for the Tuition and Fees category as the dot product of the category vector with the category change vector. The ratio of the new value to the old value is the percentage increase in the Tuition and Fees revenue category. Dividing this by the percentage increase in FTE enrollment yields the rate of increase in college tuition.

The full model is not quite this simple, because the Financial Aid expenditure category is not independent of the Tuition and Fees revenue category. To account for changes in the Financial Aid category, the model computes the product of the Percentage of Students Receiving Aid with the Average Aid Percentage. This yields the Total Tuition Discount, which is the same as the ratio of the Financial Aid category to the Tuition and Fees category. From that it is possible to calculate the net tuition rate, which is the ratio of net tuition revenue to gross tuition revenue. The weighted linear model is used to calculate the net tuition rate, and that is then decomposed into the Tuition and Fees and Financial Aid category values.

Many of the elements in the category change vector have shown themselves to be relatively constant in historical data. Others vary considerably from year to year, depending on the whims of the legislature and the state of the economy.

There are two models, one for public colleges and one for private colleges, because there are statistically significant differences in the revenue and expense distributions for the two types of institutions.

Applications of the Model

The first benefit of this model is that one can change the annual change percentages, FTE enrollment growth, and various aid percentages and examine the corresponding impact on tuition rates. The model was found to have no more than 0.5% error when using it to predict actual tuition increases.

The public college and private college models have been implemented as tools within the Calculators section of the FinAid web site, and can be accessed at the URL

http://www.finaid.org/calculators/tuitionmodel.phtml

Please note that this web page implements an average model of the way in which public and private college tuition rates change. Individual colleges may vary from this model, depending on the differences in the percentage distribution of category expenditures and revenues. But similar techniques could be used with an individual college's historical data to yield a predictive model that is customized to the specific college's circumstances.

The Nature of Tuition Increases

Given this model, one can not only play "what-if" games, but also derive important relationships between the dependent and independent variables and use it to explain why tuition increases faster than the consumer price index.

Impact of Tuition Discounting on Tuition Increases

The model equates the change in *net tuition revenue* with the weighted sum of the changes in the other variables. The net tuition revenue must then be adjusted to arrive at the figures for gross tuition revenue and financial aid expenditures. The gross tuition revenue is then normalized by the change in FTE enrollment to arrive at the change in tuition rates.

The conversion from net tuition revenue to gross tuition revenue introduces a multiplier effect. This means that even if all the other variables were to increase at the inflation rate, tuition rates would still increase faster than inflation. Normalizing by the change in FTE enrollment also introduces an inverse multiplier, but its magnitude is less than that of the discounting multiplier. (Increases in enrollment during the next decade will have a tendency to slow tuition increases slightly.)

Let D be the percentage discount and E the percentage increase in enrollment. Then the combined multiplier which converts from the change in net tuition revenue N to the change in tuition rates T is:

$$T = \frac{N}{(1-D)\cdot(1+E)}$$

For public colleges D is 21.9% and E is 0.5%. This yields a multiplier of 1.27.

For private colleges D is 25.3% and E is 1.3%. This yields a multiplier of 1.32.

This means that college tuition rates increase 27% to 32% faster than they would if colleges didn't use their own funds to award financial aid. Practically speaking, this adds 2 to 3 percentage points to the rate of increase in tuition. Discounting effectively charges higher income students 27% to 33% more in order to subsidize lower income students. Without institutional financial aid, colleges would charge tuition rates that are 22% to 25% lower, but then many lower income students would not be able to attend.

Therefore, even if the rest of the college's cost structure were to increase at the inflation rate, tuition discounting would still lead to tuition rates that increase approximately 30% faster (relative scale) or 2% to 3% higher (absolute scale) than inflation. A third of the increase is attributable to tuition discounting.

Note that this model only demonstrates a relationship between financial aid from the institution's own funds and net tuition rates. It does not discuss any possible relationship between other sources of financial aid (e.g., federal student aid) and tuition rates. In fact, several other studies have shown no correlation between increases in federal student aid and increases in college tuition.

Impact of Revenue Stream Distribution Percentages on Tuition Increases

Tuition revenue isn't the only source of funding for colleges. This is both a plus and a minus. It means that other revenue sources help subsidize the cost of a college education. On the other hand, it also leads to increases in tuition in two distinct ways.

1) It means that tuition rates are sensitive not only to changes in the university's expenditures, but also to changes in its revenue sources. Tuition revenue is the only source of revenue for which the university has some degree of discretionary control, meaning that it is the only means available for colleges to make up funding shortfalls.

   At public colleges, funding from the state government is highly volatile. When state funding doesn't increase at the same rate as the expenditures or is even cut, it leads to very large increases in tuition rates. Additional details are described in *Contributions of Independent Variables to Tuition Increases* below.

   At private colleges, tuition rates are fairly sensitive to changes in private giving and endowment income, albeit not to the same degree as public colleges depend on state funding. Although private colleges tend to invest the endowment funds fairly conservatively, the endowment income and private giving are strongly correlated with the performance of the stock market and the economy in general. For example, the moderation of tuition increases during the mid to late 1990s is largely due to the performance of the stock market. When the economy sours, especially toward the end of a recession and just afterward, tuition rates will increase more rapidly. (On the other hand, interest rates on education loans typically drop at this time. To the extent that students can lock in the interest rates at a fixed rate by consolidating them, it compensates somewhat for the increases in tuition.)

2) More importantly, it adds another multiplier effect. Since tuition revenue must take up the slack in other revenue variables, the ratio T of tuition revenue to total revenue introduces a multiplier. Shortfalls in other revenue sources increase tuition revenue with the following multiplier:

$$\frac{1-T}{T}$$

This means that the greater the percentage of revenues that comes from tuition, the less sensitive tuition rates are to shortfalls in non-tuition revenue. This is an interesting homeostatic effect, because it means that tuition increases become slightly less

volatile every year and the sensitivity to non-tuition revenue shortfalls will be diminishing with time. In other words, when the bulk of a university's revenue comes from tuition, tuition increases will more closely match cost increases.

For public colleges T is about 19%, yielding a multiplier of 4.26. For private colleges T is about 43%, yielding a multiplier of 1.33. This means that public colleges are much more sensitive to changes in the other revenue streams than private colleges, which explains why the tuition rate changes at public colleges are much more volatile and tend to swing to greater extremes. A 1% shortfall in non-tuition revenue sources at public colleges requires a 4.3% increase in tuition revenue to compensate. At private colleges, a 1% shortfall in non-tuition revenue requires only a 1.3% in tuition revenue.

The percentage of total revenues coming from tuition revenue is increasing by only about half a percentage point each year (0.52% for private colleges and 0.54% for public colleges) and this change will tend to decline as the tuition revenue percentage increases. This means that there won't be any noticeable declines in volatility for private college tuition for at least another 20 years. The impact on public college tuition is more dramatic, with significant reductions in volatility to be expected in just 10 years, if trends continue heading in the same direction.

Therefore, changes in net tuition revenue should more closely track changes in expenditures in the future. The gap between tuition increases and the inflation rate will narrow as tuition revenue grows to become a larger percentage of the university's revenue, albeit somewhat slowly. The gap will never close completely, of course, due to the tuition discounting multiplier discussed in the previous section.

Contributions of Independent Variables to Tuition Increases

It is possible to assess the contribution of each variable to tuition increases by comparing the component product (the absolute category increase) with the absolute change in gross tuition revenue or with the absolute change in total expenditures or total income. This can then be used to rank order the variables, identifying the variables that account for the greatest percentage of tuition increases. A similar analysis can also be performed for income sources.

Generally, if an expense represents a high percentage of the total expenditures, it will also have a greater impact on tuition increases. The only exception is when the percentage change in the variable is low. Likewise, if the percentage change in the variable is high, and the expense represents a medium to high percentage of total expenditures, it will also have a high impact on increases in tuition.

At public colleges, the following are the primary contributors to tuition increases:

Category	Percentage of Total Expenditures or Total Income	Percentage of Tuition Increase
Instruction	31.1%	26.8%
State Government Revenue	35.2%	-23.6%
Federal Government Revenue	11.1%	-11.7%
Financial Aid	4.4%	11.0%
Research	9.8%	10.3%
Institutional Support	8.7%	10.0%
Academic Support	7.4%	8.9%

In this table, percentages do not sum to 100% because:

- Categories contributing an insignificant percentage have been omitted.

- The percentages reported are magnitudes with signs indicating the polarity. The formula for computing tuition revenue is:

  Tuition Income = Total Expenditures – Non-Tuition Income

  For example, when a non-tuition revenue item increases, it leads to a decrease in tuition, and when it decreases (as is more often the case) it leads to an increase in tuition. As such, the sum of individual magnitudes will be greater than 100%.

The percentages in the private tuition table will not sum to 100% for similar reasons.

This demonstrates that declines in state government revenue and increases in instruction costs have a significant impact on increases in tuition rates. When state support of higher education drops, public college tuition increases. Research costs, which are often blamed for the high cost of a college education, have less of an impact than financial aid.

At private colleges, the following are the primary contributors to tuition increases:

Category	Percentage of Total Expenditures or Total Income	Percentage of Tuition Increase
Instruction	26.1%	35.2%
Private Gifts & Grants Revenue	13.7%	-15.3%
Financial Aid	11.0%	14.0%
Institutional Support	10.2%	12.8%
Federal Government Revenue	13.7%	-11.7%
Research	7.4%	9.4%
Student Services	5.3%	8.7%

Notice how state government revenue is not a significant factor for private colleges. It is replaced by a dependency on private gifts and grants. The cost of instruction is the most significant contributor to tuition increases, to a greater extent than at public institutions. Again, research costs are less significant than financial aid in explaining tuition increases.

Sensitivity of Tuition Increases to Changes in Independent Variables

If a college wants to try to moderate tuition increases, it is more important to identify the sensitivity of tuition increases to changes in each variable. If a particular category represents only a small percentage of the total budget, cutting it will have a negligible impact on tuition increases.

To measure the sensitivity of tuition increases to changes in each variable, the impact of a 1% change in the variable on gross tuition revenue is evaluated. In the case of expenditures, it is a 1% cut. In the case of revenues, it is an increase.

The following table lists the sensitivity of tuition revenue at public colleges to a 1% change in each variable:

Category	Change in Tuition Rates
State Government Revenue	1.9%
Instruction	1.7%
Federal Government Revenue	0.6%
Institutional Support	0.5%
Research	0.5%
Academic Support	0.4%
Financial Aid	0.2%

The following table lists the sensitivity of tuition revenue at private colleges to a 1% change in each variable:

Category	Change in Tuition Rates
Instruction	0.6%
Federal Government Revenue	0.3%
Financial Aid	0.3%
Institutional Support	0.2%
Research	0.2%
Private Gifts & Grants Revenue	0.2%

This shows that cutting instruction costs and lobbying the government for increased funding will have the greatest impact on moderating tuition increases at both public and private colleges. That will have more than three times the impact of cutting the research budget.

Relating Financial Aid Increases to Tuition Increases

Let T be the percentage increase in tuition rates, E the percentage increase in FTE enrollment, F the percentage increase in the financial aid budget, D the average tuition discount during the previous year, P the current percentage of students receiving financial aid, and A the current average aid percentage. Then we have the following formula relating T and F:

$$F = \frac{T \cdot (1+E) \cdot P \cdot A}{D} + \frac{(1+E) \cdot P \cdot A}{D} - 1$$

This formula implies that the increase in the financial aid budget will exceed the increase in tuition rates. In fact, given current values for E, P, A, and D, it implies that the financial aid rate of increase at a typical school will be 3 to 4 percentage points higher than the tuition rate increase.

Relationship of Tuition Increases to the Consumer Price Index (CPI)

The Consumer Price Index (CPI) measures the average change in the cost of a fixed market basket of goods and services purchased by consumers. The items in the market basket include:

- Food and beverages

- Housing, including shelter, fuels and utilities, and household furnishings

- Apparel

- Transportation, both public and private

- Medical care

- Recreation

- Education

- Communication, including postage, telephone, and computer

- Other goods and services, including tobacco and personal care products and services

Education contributes a small percentage to changes in the CPI, in part because it represents a small percentage of consumer expenditures and in part because the CPI is an average over the expenditures of all consumers, not just the expenditures of households with college-age children. College tuition and fees represents just 1.1% of the index. In contrast, food and beverages accounted for 15.7% of the index, housing for 40.9%, apparel for 4.4%, transportation for 17.1%, medical care for 5.8%, recreation for 6.0%, communication for 3.1%, and other goods and services 4.3%. So clearly, big changes in the cost of a college education will have a very small impact on the consumer price index.

Similarly, if one looks at the goods and services purchased by colleges and universities, one sees a rather different basket of goods and services. College costs are much more heavily weighted toward personnel, technology, facility and regulatory costs, which tend to increase faster than the consumer price index. For example, faculty salaries tend to increase faster than salaries for the population at large because of the higher educational attainment of faculty and because of competition with industry for PhD-level candidates. The gap between university and industry salaries adds pressure on colleges to increase faculty salaries faster than inflation, just to prevent the gap from growing too much wider.

Thus there is no reason to expect college tuition and the consumer price index to be correlated. Unfortunately, the public and news media tends to think of the inflation rate as a uniform figure that applies equally to all goods and services in every community across the United States.

College tuition increases should be compared with the changes in a market basket of goods that reflects the goods and services purchased by colleges and universities, not the consumer price index. The Higher Education Price Index (HEPI) is just such an index. It measures the average national cost for a fixed basket of goods and services purchased by colleges and universities. This basket includes educational supplies, materials and

equipment, goods and services required for general operations, equipment for operating facilities, salaries and benefits for faculty and staff, the cost of communication and technology infrastructures, library costs, utilities, and transportation.

When one compares the increases in college tuition against the Higher Education Price Index, a slightly more favorable picture appears, although college tuition still increases faster than the index. The average annual increase in four-year college tuition from 1980-81 to 1996-97 was 8.4% according to the College Board's historical data. The average annual increase in the HEPI during the same period was 4.7%. The average annual increase in the CPI during the same period was 3.8%.

Although individual annual changes in tuition inflation and general inflation are not correlated, when one computes a 17-year moving average a correlation becomes apparent. The basis for using a 17-year moving average is that it helps parents of newborn children predict future college costs when their children matriculate. The first graph shows 17-year moving averages for tuition inflation and general inflation. In this graph the 17-year trailing averages have ranged from a low of 5.9% to a high of 9.1%, with a mean of 7.8%. During the same period the 17-year trailing average for general inflation ranged from a high of 6.9% to a low of 3.2% with a mean of 5.4%.
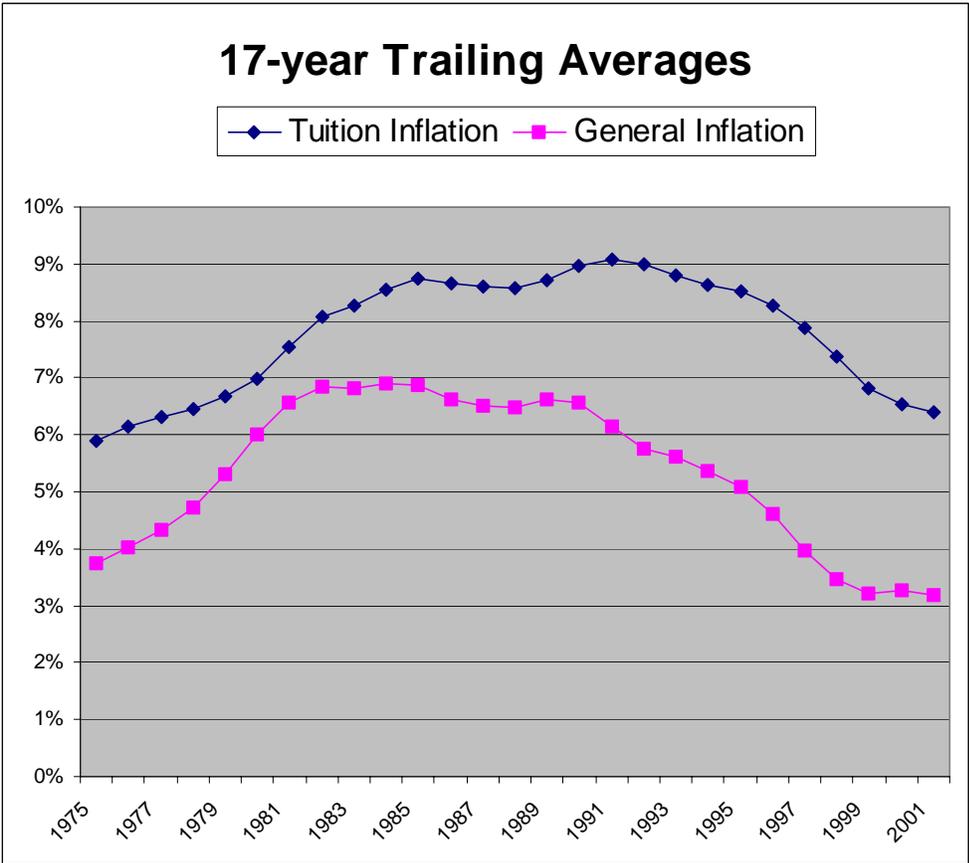
The second graph shows the ratio of the 17-year trailing averages for tuition inflation and general inflation. The ratios range from a recent high of 2.1 to a low of 1.2 with a mean of 1.5.

**Ratio of Tuition Inflation
to General Inflation**

17-year trailing averages
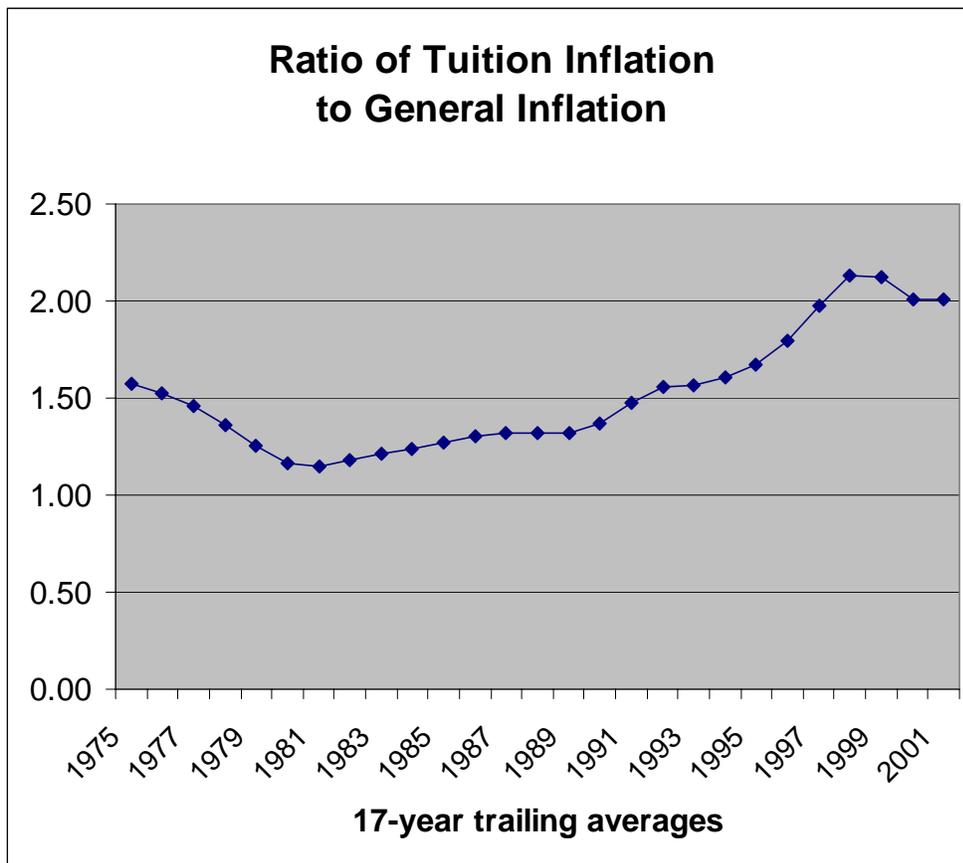
Appendix A includes the annual tuition data used to generate these graphs.

More information on the Consumer Price Index can be found at the Bureau of Labor Statistics web site,

http://www.bls.gov/cpi/home.htm

Impact of Financial Aid and the Federal Need Analysis Methodology

A December 2001 report[1] by the National Center for Education Statistics found no associations between financial aid and tuition prices, with the exception of institutional aid. In particular, there was no relationship found between college costs and federal grants, state grants and student loans, dispelling the myth that increases in federal and state aid result in increases in college prices. However, this study did not consider a possible relationship between increases in the average expected family contribution (EFC) figure and college costs. It would be worthwhile to investigate this relationship.

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[1] Alisa F. Cunningham, Jane V. Wellman, Melissa E. Clinedinst, and Jamie P. Merisotis, Study of College Costs and Prices, 1988-89 to 1997-98, National Center for Education Statistics, NCES Report 2002157, December 2001. Available at the URL http://nces.ed.gov/das/epubs/2002157/

Recommendations

The conclusions of this report are presented in the executive summary. The following are specific concrete recommendations for moderating tuition increases.

1) The National Center for Education Statistics should increase the frequency of the National Postsecondary Student Aid Study to annual, from triennial, in order to permit more timely tracking of the factors affecting tuition rate increases. Likewise, NCES should take steps to improve the efficiency of the data collection and publication for the Digest of Education Statistics, so that all tables will include more recent data. The most recent data listed in some tables is five years old.

2) Public colleges and universities and voters should apply pressure on state legislators and governors to reverse the trend toward declining state support of higher education.

3) Colleges and universities should look for ways to reduce instruction costs and hold increases in instruction costs to the inflation rate. This will have the greatest impact in moderating tuition increases.

4) The federal government should increase appropriations, grants and contracts to colleges and universities.

5) Federal and state governments should increase the amount of funding devoted to student financial assistance programs. To the extent that this reduces the need for colleges to increase their own financial aid budgets, it will help keep the average tuition discount from growing. That, in turn, will keep the discount multiplier from growing.

Moreover, since federal and state student financial aid is applied before the impact of the tuition discount multiplier, increases in federal and state aid are extremely effective at reducing the rate of increase of college tuition. If it weren't for the Pell Grant, for example, college tuition rates would be approximately 15% higher and the annual increase in college costs would be at least 1% higher.

6) Federal, state, and local governments should reduce the regulatory burden on colleges. Complying with the increasing number of regulations – in particular, with the reporting requirements – adds to college costs.

7) The US Department of Education should study the relationship between increases in average EFC figures and average tuition rates. In addition, it would be worthwhile to examine how historical average EFC figures have changed relative to family income when measured on a current and constant dollar basis for each income quartile.

Appendix A – Annual Tuition Inflation Rates

The following table shows historical tuition inflation and general inflation rates. The tuition inflation rates are based on College Board data from 1971 to 2001 and the Digest of Education Statistics from 1958 to 1970. The general inflation rates are based on CPI-U figures from the Bureau of Labor Statistics.

Year	College Inflation (CB)	General Inflation (CPI)
1958	7.81%	2.47%
1959	5.19%	0.80%
1960	5.00%	1.41%
1961	5.38%	1.21%
1962	4.89%	1.02%
1963	6.64%	1.54%
1964	4.61%	1.11%
1965	5.18%	1.79%
1966	6.04%	2.78%
1967	3.62%	2.87%
1968	5.03%	4.29%
1969	9.24%	5.45%
1970	8.32%	5.90%
1971	8.60%	4.37%
1972	6.07%	3.04%
1973	3.60%	5.73%
1974	5.93%	11.53%
1975	7.20%	9.65%
1976	9.27%	5.43%
1977	8.10%	6.72%
1978	7.37%	7.74%
1979	9.05%	11.27%
1980	12.00%	13.22%
1981	13.95%	10.73%
1982	14.35%	6.48%
1983	9.78%	2.44%
1984	8.03%	4.14%
1985	8.15%	3.55%
1986	8.02%	1.61%
1987	7.39%	3.90%
1988	7.89%	4.16%
1989	8.61%	4.99%
1990	7.83%	4.81%
1991	7.61%	4.45%
1992	5.79%	3.16%
1993	5.99%	2.78%
1994	5.44%	2.77%
1995	5.32%	2.76%
1996	5.05%	2.95%
1997	5.16%	2.29%
1998	5.24%	1.56%
1999	4.56%	2.21%
2000	5.25%	3.36%
2001	5.48%	2.85%

The following table shows the annual tuition inflation rates from 1979 to 2001 based on the "College tuition and fees" component of the Consumer Price Index from the Bureau of Labor Statistics. The BLS tuition inflation figures are, on average, higher than the corresponding College Board figures, with an average magnitude of the difference of 1% and a net difference of about 0.25% per year. (From 1991 to 2001 the net difference is 0.75% per year.)

Year	College Inflation (CPI)	General Inflation (CPI)
1979	8.01%	11.3%
1980	9.43%	13.5%
1981	12.43%	10.3%
1982	13.44%	6.2%
1983	10.41%	3.2%
1984	10.23%	4.3%
1985	9.10%	3.6%
1986	8.09%	1.9%
1987	7.56%	3.6%
1988	7.60%	4.1%
1989	7.93%	4.8%
1990	8.09%	5.4%
1991	10.17%	4.2%
1992	10.74%	3.0%
1993	9.37%	3.0%
1994	6.98%	2.6%
1995	6.00%	2.8%
1996	5.66%	3.0%
1997	5.11%	2.3%
1998	4.22%	1.6%
1999	3.98%	2.2%
2000	4.14%	3.4%
2001	5.09%	2.8%
1979	8.01%	11.3%