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ABSTRACT

This paper consists of results of a state survey and case studies of Minnesota and Massachusetts, two states with recent histories in implementing tuition formulas. Both case studies are discussed within the context of state fiscal conditions and appropriations. The survey revealed that 16 states are attempting to establish an enduring rationale for their tuition levels by utilizing a pre-set number to serve as a yardstick for setting tuitions. The report attempts to assess, among other things: (1) Whether tuition formula systems succeed in bringing policy rationales and predictability to the state financing structure; (2) Whether tuition formulas also may cause consequences that are not positive in terms of access and quality; and (3) Whether there are ways to maximize positive consequences and minimize the negative. Among the study's conclusions are that: percent-of-cost formulas may bring a sense of predictability to the institutional funding process without leading to higher than average tuition hikes; that such formulas do not result in an overall decline in access nor confer advantages on private institutions; that such formulas, however, do not appear to lead to more stable support for public institutions and students; and that student aid benefits may not keep pace with formula generated tuition increases. Four major recommendations propose: (1) an interlocking formula for appropriating funds to public institutions; (2) an interconnecting state policy for setting financial aid benefits; (3) protections against steep tuition increases; and (4) provision for a follow-up assessment of enrollment trends. The appendix provides a summary of the results of questionnaires and phone interviews used to collect data in the other 14 "tuition formula" states. A bibliography of 12 references is attached. (GLR)

# Tuition Formulas at Work:

## An Examination of States that Use a Numerical Formula to Help Set Public College Tuition

By Lawrence N. Gold




American Association of State Colleges and Universities
Center for State Higher Education Policy and Finance

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## Preface

No matter where one turns, there is constant discussion on the cost and affordability of college. Public institutions of higher education, especially state college and universities, have enjoyed the valued support of their governments and citizens by keeping tuition levels affordable and broad access possible. In fact, their very creation was based on the idea that wider higher education participation, through lower costs and geographical accessibility, was a desirable social and state goal.

New policies have arisen in recent years in a number of states in regard to public college tuitions. In a effort to add predictability in college costs for parents and students and more stable levels of revenue for institutions (and to strike an appropriate balance between who pays and who benefits) an increasing number of states have instituted tuition formulas. These formulas most commonly are "percent-of-cost" formulas which specify that tuition should represent a constant percentage of the cost of instruction each year.

In an effort to get a better understanding of tuition formulas, AASCU's Center for State Higher Education Policy and Finance commissioned Mr. Lawrence Gold of Public Policy Advocates, Inc., of Washington, D.C. to examine them. This study consists of a state survey and case studies of Minnesota and Massachusetts, two states with recent histories in implementing tuition formulas. Both case studies are presented within the context of state fiscal conditions and appropriations.

By doing this study, we feel that we have provided a service to states, state leaders and public institutions. When a state enters into a policy debate on whether tuition formulas are appropriate for its citizens, the track record of states who have already done so should be found exceedingly useful. We hope that we have provided part of that track record.

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American Association of State Colleges and Universities
November, 1990

**The Center for State Higher Education Policy and Finance provides member institutions and interested parties with state finance data and policy analysis on critical issues in the 50 states that affect state governments and public higher education.**

# CHAPTER ONE: INTRODUCTION

For most Americans, state funding of public colleges and universities, coupled with a policy of no or low tuition, has always been the cornerstone of access to higher education.

But the burden of guaranteeing educational access in this manner has grown dramatically in the last generation, as the number of postsecondary institutions and the level of postsecondary enrollment mushroomed, and, particularly in the 1980's, as many costly social welfare responsibilities shifted from the federal government to the states and created severe state budget pressures.

Under these conditions, it has become increasingly attractive to shift a greater share of the burden of public higher education to individuals in the form of higher tuition, and to rely on student financial aid programs to assure that access for needy students is maintained. Proponents of this stance argue that student aid is:

-- More equitable than low tuition because it provides support only to students who demonstrate financial need, rather than all students regardless of income;

-- More cost effective because it takes less money to support the needy than to provide a subsidy for all;

-- More supportive of quality because it allows students to "vote with their feet" and thereby fosters healthy competition and variety in educational offerings, including competition between public and private institutions.

Critics of this approach are concerned that levels of student aid support will inevitably fail to make up for tuition hikes. They are concerned that students will not trust student aid in the way they trust low tuition, and will therefore not enroll in college. They are concerned about shifting public funds from accountable public institutions to private institutions. Finally, they are concerned about the whole notion--and funding implications-- of treating higher education more as a private benefit than a public good supported by public funds.

Today, every time a new tuition is set at a public college or university, the responsible agency has to revisit these debates about the appropriate role of institutional support, tuition and student aid in financing higher education. And this must be done in an atmosphere where rising college costs have become an issue of great public concern, even, in some cases, outrage.

The officials who set tuition-- who may be part of the state higher education agency, or the college governing board, or the legislature itself-- meet their responsibility in a variety of ways. Most often, they simply set tuition at a level to "fill in" whatever funds are missing after the state budget is finalized. Sometimes they look at external factors, such as tuitions

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at neighboring states, or at similar kinds of institutions. They may take into consideration the Consumer Price Index (CPI) or the Higher Education Price Index (HEPI).

But a number of states, 16 of them, responded in a survey that they utilize a pre-set number to serve as a yardstick for setting tuitions. Most often, this takes the form of a policy that tuition at public colleges will represent a particular percentage, perhaps 25%, 30% or 33%, of the state appropriation for instructional costs year after year. In one state, tuition is expected to represent a pre-set percentage of per capita income. In a few states, tuition increases cannot exceed a certain percentage.

In any case, all these states are attempting to establish an enduring rationale for their tuition levels, one that will be accepted by the public and the political system, and that will insert predictability into the state financing system. These 16 states will be called "tuition formula" states, although, as we will see, tuition-setting is never as mechanistic or apolitical as the term "formula" implies.

This report will attempt to assess, among other things:

-- Whether tuition formula systems succeed in bringing policy rationales and predictability to their state financing structures;

-- Whether tuition formulas also may cause consequences that are not positive in terms of access and quality; and

-- Whether there are ways to maximize positive consequences and minimize the negative.

The research is based primarily on two case studies backed by field trips in the spring of 1990-- one to Minnesota, whose system is widely admired, and one to Massachusetts, that by all accounts has had its troubles. In addition, the report summarizes the results of questionnaires and phone interviews in the other 14 states that reported using numerical guidelines to set tuition. The display on the following page identifies the 16 tuition formula states.

## TUITION FORMULA STATES

-- Thirteen use a formula that pegs tuition to a percent of the state appropriation for instructional costs. These are: **Arizona, Colorado, Connecticut, Florida, Georgia, Illinois, Kansas, Massachusetts, Minnesota, New Jersey, Tennessee, Virginia and Washington.**

-- One, **Kentucky**, uses a formula that pegs tuition to per capita income.

-- Two, **California and South Dakota**, use formulas that just peg tuition increases to a set percentage.

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It should be explained at the outset that the states do not divide neatly into formula and non-formula categories. Some states that do not describe themselves as having a tuition formula (such as Arkansas) do, in fact, consider the percent of the cost of instruction covered by tuition as one of many factors in setting tuitions. Some of the states that list themselves as having a formula system also consider non-numerical factors. In any case, however, the experience of these 16 states should be illuminating.

TABLE 1.1: DISTRIBUTION OF STATES HAVING FORMULA, BY TYPE OF FORMULA USED.

| % OF COST | PER CAPITA INCOME | INCREASE FORMULA ONLY |
|---|---|---|
| ARIZONA | KENTUCKY | CALIFORNIA |
| COLORADO | | SOUTH DAKOTA |
| CONNECTICUT | | |
| FLORIDA | | |
| GEORGIA | | |
| ILLINOIS | | |
| KANSAS | | |
| MASSACHUSETTS | | |
| MINNESOTA | | |
| NEW JERSEY | | |
| TENNESSEE | | |

| % OF COST | PER CAPITA INCOME | INCREASE FORMULA ONLY |
|---|---|---|
| VIRGINIA | | |
| WASHINGTON | | |

We will start by looking at Minnesota, then Massachusetts. Then, we will summarize the characteristics of all the tuition formula states and evaluate our findings. We hope this report will help state and institutional officials determine what is likely to work best for them and how to minimize unforseen and unwelcome consequences.

## CHAPTER TWO: MINNESOTA

Minnesota's higher education financing strategy appears to have fulfilled many of the hopes of its framers, and also, paradoxically, to have confirmed important concerns of its detractors.

## HIGHER EDUCATION IN MINNESOTA IN THE EARLY 1980'S

Minnesota has a strong public higher education system and a long history of healthy support for it. In addition to the University of Minnesota system, there is a second state system, the Minnesota State University System with seven campuses. The state also has 18 community colleges and 34 technical colleges, each administered by a systemwide board. (The technical colleges offer vocationally-oriented programs that sometimes overlap those of the community colleges. The technical colleges originally arose out of the elementary and secondary education system and retain an organizational relationship with it.) The Minnesota Higher Education Coordinating Board has responsibility for coordination among the various systems.

There are also 23 private colleges in Minnesota, which have roughly one quarter of the enrollment (47,000 in 1987) of the public institutions (187,598). Minnesota for many years has been among the leading states in high school graduation rates and in per capita enrollment at public institutions.

By the early 1980's, Minnesota ranked sixth among the states in per capita state appropriations for postsecondary education, eighth in appropriations per undergraduate student, and ninth in total appropriations for the 1982-83 school year. The state also maintained an extensive need-based aid program providing grants to students at public and private colleges.

However, in 1981 and 1982, two factors converged to make the state's higher education funding suddenly look precarious. The first of these was the deep recession of the early 1980's, which generated cutbacks in state funding to both institutions and students. The second factor was a projected decline in enrollments. These conditions would have created trouble under any circumstances, but state planners felt the problems were made much worse by the state's uncoordinated and (in their view) irrational mechanisms for generating tuition, institutional appropriations and student aid.

Institutional funding: The formula used to generate budgets for Minnesota's public institutions varied from system to system, and in some cases, from institution to institution, counting a hodgepodge of factors weighted in no consistent way.

Not surprisingly, when economic conditions and enrollment projections turned bad, institutions rushed to cut their own deals with the legislature. This was disturbing both to

state planners and to many state legislators, who wanted to insert more predictability (and political insulation) into higher education funding.

Similarly, public college tuitions were set by the boards of each system without any particular guidelines. Tuitions varied widely and were characterized, on the one hand, by price competition, and on the other hand, by increases when state funding was impaired. For example, by 1983, according to the Higher Education Coordinating Board, the percentage of instructional costs covered by tuition at the University of Minnesota was 32%, while tuition covered 26% of costs at the state colleges, 31% at the community colleges and 17% in the technical colleges. These percentages of instructional cost were not, of course, arrived at by any established state policy. Tuition increases in different parts of the public college sector ranged from 0% to over 11% between 1980 and 1981, and from 5.6% to nearly 15% between 1981 and 1982.

There was also a feeling on the part of some planners that tuitions were too low in relation to the general population's ability to pay. It was noted, for example, that while the state's per capita income had risen 19.5% in constant dollars between 1971 and 1981, tuition had only risen 5.5%. It was argued that it would be more equitable and cost effective to hike tuitions and provide generous student aid to the poor, rather than to continue providing a subsidy to all Minnesotans in the form of low tuition.

## INCEPTION OF THE MINNESOTA TUITION AND FUNDING SYSTEM

In 1983 a plan interrelating institutional appropriations, tuition and student aid was put into place by the legislature, based largely on recommendations developed by the state coordinating board in consultation with a broad-based advisory group. The intentions of the plan's framers were to:

-- Rationalize the budget process, and minimize special pleadings;
-- Impose what they saw as a more appropriate (and heavier) burden on individuals;
-- Create equity among the state systems;
-- Generate institutional revenues;
-- Provide a measure of political insulation from unwelcome funding and tuition decisions; and
-- Put students and their parents on the side of restraining institutional budgets, since every budget increase in turn generated a tuition increase.

## BASICS OF THE MINNESOTA SYSTEM

### Institutional Funding

There are three parts to the institutional funding system instituted in 1983. First is an appropriation for non-instructional expenses (such as capital costs). Second is a relatively small appropriation for new initiatives and special projects. The third, and key component, is an appropriation for instructional costs, from which institutions fund the bulk of their operating expenses.

It is this appropriation for instructional costs that triggers the state tuition system. Interestingly (and not surprisingly), the legislature has chosen to enact this tuition-triggering part of the budget on a two-year basis every non-election year, while allocations for capital and special projects are made in election years.

The instructional cost appropriation is made each biennum under a system called average cost funding. Under average cost funding, whatever funds are appropriated by the legislature for instructional costs are made available to institutions based on their enrollment two years earlier. (Note: average cost funding does not require the legislature to appropriate a certain amount for education. It is a system for dividing the funds appropriated.)

When the policy was initiated, it was expected that enrollments would be declining. Therefore, providing funds based on enrollments from two years earlier was expected to provide schools with somewhat more money than they'd need to cover their enrollees each year, and enable them to manage the transition to lower enrollments without massive dislocations.

### Tuition-Setting

The instructional cost appropriation interlocks with tuition-setting in the following way. Each biennium, the legislature's appropriation is expected to cover 67 percent of the average cost funding base for the University of Minnesota, the state university system, and the state community colleges. The remaining 33% of instructional costs is expected to come from tuition and fees set by the governing boards of each system.

Note that the legislature does not set the tuitions and fees. In fact, Minnesota statute specifically states that the systems "shall not be required to establish tuition at any specific percentage of instructional costs." In general, however, the policy means that schools would be shortchanging themselves if they set tuition below the expected percentage, and would be open to charges of price-gouging if they set tuitions significantly above that percentage.

The expected tuition percentage for the technical colleges was set originally at 25% of cost, and now at about 27%. The percentage is lower for technical colleges because vocational education is costly, and if students were forced to pay 33% of the cost base at these schools, tuitions at technical colleges would rise disproportionately higher than the community colleges.

Student aid

As the third leg of the state funding stool, Minnesota's need-based state grant program was pegged to a "Design for Shared Responsibility" under which students would be expected to supply 50% of the cost of attendance through savings, work, and/or loans, with the other 50% expected from parental savings and income (on a sliding income scale), federal aid and then state aid. The formula is based on actual public tuition charges and a standard living and miscellaneous expense allowance. The amount of aid available to students at private colleges is equal to the cost of instruction at public institutions "of similar scope and scale" (now about $7,200 for students at four-year institutions).

## MINNESOTA'S FUNDING POLICIES IN PRACTICE

The Minnesota funding system then, could be termed a "high tuition-high student aid-predictable institutional aid" model. However, as we discussed earlier, supporters of public higher education sometimes raise questions about how such systems are likely to work in practice. Minnesota's experience since 1983 provides some answers to these questions.

Impact on State Funding

State appropriations to Minnesota's public higher education system have gone up every year since the 1983 policy initiatives went into effect. The increase in appropriations has been somewhat, but not much less than the increase in tuitions during this period (57.3% v. 61.8%).

However, because state funding increases have not kept pace with the unanticipated enrollment growth, the amount of money available per student has declined in constant dollars. This can be seen as follows.

> *-- From 1978 to 1989 in constant dollars, per pupil instructional expenditures declined by 9% at the state colleges, by 7.6% at the community colleges and by 2.9% at the technical colleges. Only the University of Minnesota enjoyed a constant dollar increase of 7.9% between 1978 and 1989.*

*-- In 1988-89 comparisons with other states, Minnesota ranked high, #18 in the percent of tax revenues allocated to public higher education, but only #41 in the ratio of collected tax revenues allocated to public higher education compared to public college enrollment per capita.*

*-- In just one year, from 1984 to 1985, Minnesota's rank among the states in terms of appropriations per full-time equivalent student fell from #24 to #31.*

Furthermore, since the average cost funding system provides money to colleges based on their enrollment two years earlier, public colleges have had to absorb an enrollment growth each year without any new state funding to cover it. Between 1984 and 1990, for example, the state college system educated over 20,000 people not covered by state support. Discontent with this led to a partial revision of the system, under which, in cases where enrollments are growing, the legislature has begun funding uncounted students from the previous year at 65% (rather than 100%) of average cost.

In sum, enrollment growth during the 1980's, rather than the predicted decline in enrollment, has produced serious funding shortages which the state has not been willing to resolve.

Impact on Tuition

As noted earlier, the policy was expected to (indeed, intended to) hike tuitions. That it did so is illustrated by the following.

*-- In the first year of the new policy, tuitions rose 9.1% at the University, 20.6% at the state colleges, 17.8% at the community colleges and 28% at the technical colleges.*

*-- Minnesota tuitions for resident undergraduates are now in the top rank of the states; #11 for state universities, #13 for state colleges and #6 for community colleges in 1989-90.*

*-- The percent of instructional costs covered by tuition has gone from 32% to 33.3% at the University of Minnesota; from 26% to 36.1% in the state university system; from 31% to 35.6% at the community colleges; and from 17% to 26.3% at the technical colleges.*

*-- Between 1981 and 1989, tuition and fee increases generally exceeded increases in per capita income. During the period, Minnesota per capita income rose 15.4% in constant dollars, while University of Minnesota tuition and fees rose 32.8%,*

*state college tuitions rose 67.7%, community college tuitions rose 47.2% and technical institute tuition rose 151.3%.*

*-- According to the latest data from the National Center for Educational Statistics (FY 86), Minnesota ranked #18 among the states in tuition as a percentage of total educational and general revenues at public institutions, and #15 in tuition and fee revenues per full-time equivalent student at public institutions.*

Those who are skeptical about percent-of-cost formulas have always been concerned that states, in order to get more money from students, would expand the base of costs for which tuition could be assessed without increasing appropriations. That fear was realized to some extent this year when the Minnesota legislature mandated that institutions begin to cover part of the cost of servicing debts on college construction projects from their own budgets. The legislature told colleges not to meet these costs through tuition during the first year of the new policy, but this prohibition does not apply to subsequent years and many expect that tuition will be raised in response.

In short, since the 1983 policy was put into effect, tuitions are high and have gone up, and it now looks as though new cost burdens on institutions will give rise to further increases.

On the other side of the coin, however, tuitions were going up before 1983 and they have not gone up out of line with the national average since then. Tuition increases, initially in the double digits, have moderated to the low and mid single digits since then. In fact, in the last four years, overall tuition increases in Minnesota were well <u>below</u> the national average.

And although tuitions exceeded per capita income growth in the 1980's, Minnesota officials point out that tuitions declined in relation to per capita income in the 1970's. Tuitions have, in fact, now returned to a relationship with per capita income that is only slightly above the 1970 level for four-year institutions, and even slightly below the 1970 level for community colleges.

<u>Impact on Student Aid</u>

When Minnesota's average cost funding and tuition policies first went into effect, appropriations for student aid increased by a much higher proportion than tuitions.

The average state award per recipient rose by 49.7% and grants became more targeted on the poor, with the percent of grants going to families with incomes below $20,000 increasing from 50% to 63%. Minnesota officials reported that tuition hikes that year were fully offset by increases in the federal and state grant package for lower income students.

Minnesota remains highly ranked among the states (#6 in 1988) in total payments for need-based scholarships, and lower, but still high (#15) in average awards.

However, in every year since the first, student aid growth has lagged behind the growth in tuition. In fact, student aid benefits went down 4% in 1989 as tuitions rose between 2.6% and 5.2% at the public colleges.

At the same time, borrowing under federal loan programs increased dramatically. Between 1983 and 1988, borrowing under these programs increased 61% in Minnesota. In just one year, between 1987 and 1988, borrowing increased by 34.4%.

Even if funding were adequate for low income students, and that no longer appears to be the case, three questions would remain.

-- What has been the effect on middle-income students? By design, the aid available to middle-income students declined significantly when the 1983 tuition policy was put into effect and it has declined since. For example, from the very first year, the percent of grants going to families with incomes of $30,000 or more declined from 21% to 13%.

-- Do students respond as favorably to high student aid as they do to low tuition? The status of enrollment will be addressed in the next section, but, for now, it should be noted that a 1989 study conducted for Minnesota showed that too few high school students knew much about the state's student aid programs, and that nearly two-thirds of the respondents indicated little or no confidence that tuition hikes would be offset by student aid increases.

-- Finally, is student aid simply sending aid to the private colleges? In fact, while private colleges enroll only 18% of the students in Minnesota, more than half of the state's student aid money goes to these students. In conclusion, when it comes to student aid, it has to be said that many fears of the skeptics-- about lagging benefit increases, inadequate student information, aid to middle-class students and public funding of private institutions--seem to be realized. This despite a genuine state effort to keep benefits high and targeted.

Impact on Access

If the proof of the pudding is in the eating, it is clear that Minnesota's high tuition-high student aid policy has not had an overall adverse effect on access.

***-- Minnesota has the highest high school graduation rate in the country, 91.4%, and 89% of Minnesota's high school graduates enroll in some form of postsecondary education, full-time or part-time, within six years of high school.***

*-- Postsecondary enrollment in Minnesota grew 9.5% between 1982 and 1987, although there was a small .3% loss in 1984 immediately after the new policy was enacted, and fall 1988 enrollment increased 4% over 1987.*

*-- Minnesota's rank among the states in the percentage of students enrolled at public institutions compared to population went from #19 in 1984-85 to #2 in 1985-86.*

Two caveats should be noted, however. First, a study has not been undertaken to determine if there have been any changes in the income level of the public student body since the 1983 policies were promulgated. For example, we saw earlier that the aid available to middle-income students was reduced by design. Despite the overall enrollment increase, it is certainly possible that a cohort of middle-income students, facing the full brunt of tuition increases without sufficient student aid to make up the difference, would be unable to start or continue their studies.

Second, the overall enrollment data do not tell us if significant numbers of students have had to compromise on their educational goals-- perhaps attending school part-time or choosing an associate rather than baccalaureate program-- in order to make ends meet. We know, for example, that full-time enrollment actually declined by 3.2% while part-time enrollment grew 58.6% between 1982 and 1987. One college president estimated that 70% of his students work during the school year, which he considered higher than is appropriate. But still, with enrollments rising as they have, it would be hard to argue that tuition increases in Minnesota have had a negative impact on overall access.

Impact on Educational Quality

The tuition policy in Minnesota is inseparable from its interlocking relationship to instructional funding, i.e., average cost funding. Proponents of average cost funding claim that it has enhanced educational quality by inserting predictability into the budgeting system, and by promoting a healthy competition among institutions to attract enrollments through the development of effective academic programs. However, a number of observers have raised concerns related to the fact that average cost funding pays schools only on the basis of their enrollments two years earlier.

One concern of state policy makers is that a focus on enrollment creates an incentive to hold onto marginal students and a disincentive to impose standards or improve remediation. At the same time, the policy encourages institutions to place students in programs that are less expensive to operate, whether or not that is what the student wants or what the state economy needs.

As in a number of states, some in Minnesota argue that it would be better to have a policy that rewards educational outputs rather than enrollments and that provides incentives for more costly educational programs and new initiatives.

Although changes at the margins of the system will be considered, state officials maintain that enrollment should remain the bulwark of the funding system, and that academic competition is working overall.

Impact on Independent Colleges

Minnesota has a strong independent college sector, with about 47,000 students attending 23 four-year, primarily undergraduate colleges, four junior colleges, eight professional schools and about 80 vocational schools.

One of the fears of public education proponents has always been that a high tuition-high student aid policy would channel funds away from public institutions into private institutions.

We have seen that private institutions in Minnesota have, in fact, derived substantial benefit from the state's student aid policies, receiving over half of the state scholarship funds. Year after year, they have also urged the legislature to include more items in the instructional cost base, which would increase the maximum scholarship grant for private college students and hike public college tuitions.

On the other hand, the overall price advantage enjoyed by public education has increased rather than decreased since 1983 and there is little evidence of public higher education being in trouble because of overattention to the private sector.

## CONCLUSIONS

Here is the Minnesota record in review:

> *-- Institutional appropriations have gone up ever since average cost funding was implemented, but the two-year enrollment lag built into the funding formula has produced serious funding shortages which the state has not been willing to resolve.*

> *-- Tuitions are high and have gone up faster than per capita income, and it now looks as though further increases are in store. However, tuitions were going up before 1983 and they have not been out of line with the national average since.*

*-- The student aid program has been plagued with lagging benefit increases, decreased support for middle-income students and a low level of consumer confidence. It has also been characterized by disproportionate funding of private institutions, which is likely to increase. These problems coexist, however, with a genuine state effort to keep benefits high and targeted.*

*-- Enrollments have gone up, but access for middle-income students needs to be examined further, and access to full-time study may have been impaired.*

*-- Average cost funding has added predictability and program competition to Minnesota's public higher education system. But concerns persist about the appropriateness of a formula driven only by enrollments rather than outputs, innovation or quality.*

*-- Private institutions have derived substantial benefit from the state's student aid policies and have pushed for changes that would increase that aid and hike public tuitions. On the other hand, the price advantage enjoyed by public education has increased rather than decreased during this period.*

The disarray that led to enactment of Minnesota's policies was a reaction to bad economic times. Since then, times have been consistently good in Minnesota. Is the relative success of Minnesota's interlocking finance system a product of good policy, an accident of good economic times, or a little of both? The example of another tuition formula state that has experienced an economic downturn, Massachusetts, is instructive.

## CHAPTER THREE: MASSACHUSETTS

In Massachusetts, the advent of a tuition formula, by most accounts, has failed to bring about a stable and predictable balance between state and individual financing of the public higher education system.

### HIGHER EDUCATION IN MASSACHUSETTS

There are 27 public institutions in Massachusetts enrolling about 180,000 students. These include three campuses of the University of Massachusetts, nine state colleges and 15 community colleges, all governed under the Massachusetts Board of Regents.

At the same time, however, Massachusetts is considered to be the epitome of a "strong private college" state. There are 84 private institutions in the state, and Massachusetts is the only state in which more students are enrolled in private than in public colleges. The public college system in Massachusetts is largely a post-World War II creation and the state's higher education interests and traditions are strongly oriented to private colleges.

This may have important political consequences. For example, while public institutions in most states draw political support from the large proportion of state legislators who are alumni, the vast majority of Massachusetts state legislators are alumni of private institutions. Considering the fact that so many politicians are lawyers, it is also significant to note that there is no public law school in the state.

### INCEPTION OF THE MASSACHUSETTS SYSTEM

The efforts of officials in Massachusetts to establish a stable and predictable tuition system must be understood in light of the relatively weak political position of public higher education in the state, and also in light of three characteristics of the state's system for setting tuition, student aid and institutional appropriations.

Tuition-setting: The state Board of Regents was established in 1980 and was given authority to set tuition at public institutions. However, the governing boards of each college system or campus retained the authority to set student activity fees. As we will see, this dispersion of authority has sometimes crippled efforts to set student costs.

Student aid: The state student aid system is similarly fragmented. The largest component is a general scholarship program, which reached an appropriation high of $64 million. About 63% of the money (a high of about $40 million) goes to students in private institutions in the state, compared to only about 30% (a high of about $19.2 million) to students in public institutions in the state.

In addition, there is a separate scholarship program for students at private colleges, with appropriations that reached a high of about $9 million. A general tuition waiver program aids needy students at public colleges. Tuition waivers are also available to state employees and veterans. In a school such as the University of Massachusetts/Boston, with many state employees and low income students, tuition waivers result in about 20% of the student body not paying any tuition.

Institutional appropriations: Finally, and in many ways most important, is the fact that, unlike Minnesota, there is no formula such as the average cost funding system to guide the legislature in making appropriations to the public college and university system. And there is little connection among the tuition, student aid and college appropriations processes.

Also, before 1988, all tuition funds were returned to the state treasury; none was made available to the institutions. On the other hand, revenues from fees were retained by the colleges. As a result, the state Board of Regents had little incentive to raise tuitions while campus administrators had considerable incentive to raise fees.

Against this background, the Regents were charged with the responsibility to develop "a rational and equitable statewide tuition plan for all institutions."

## THE 1984 TUITION INITIATIVE

The policy adopted in 1984 contained three key elements.

1. A goal was set under which tuitions were not to exceed 33% of the cost of education for resident undergraduates. This was explicitly set as a cap, not a target. The percent of cost covered by tuition at the time ranged from about 19% to 28%.

2. Maximum annual increases in tuition were to be limited to 15%.

3. In addition to these factors, tuition-setting was to take into consideration factors such as the mission of the educational segment, availability of student aid, appropriations levels, and ability to pay.

Not surprisingly, tuition decisions under this system were made in a highly subjective manner. In 1984, the Regents originally proposed a 12% tuition increase, believing that they had legislative and gubernatorial support for this increase in exchange for a significant appropriations hike. Instead, the political branches opposed the tuition hike, rolling it back to 7%.

Once burned in this fashion, the Regents did not institute any tuition hikes in 1985, 1986 or 1987. (Again, we must remember that there was little incentive to raise tuitions when none of the money reverted to higher education.)

Between 1983 and 1988, tuition increased only 10% to 15%, compared to national tuition increases of over 40% and increases in the per capita income of college bound students of 64%. The percent of cost covered by tuition had declined in all segments of public higher education, with the state colleges having the highest percentage (24.4% of cost) and community colleges the lowest (18.1%).

At the same time, campus administrators were instituting significant fee increases. From 1982 to 1988, fees had risen 76%, roughly six times as fast as tuition, twice as high as the Higher Education Price Index and one and a half times as fast as per capita income. As a result, while tuition rose only 10% to 15%, total student costs actually rose an average of 25% during this period. Fee increases differed greatly among systems, even among institutions within systems.

## THE 1988 TUITION INITIATIVE

In 1988, state higher education chancellor to the Board of Regents, Franklyn Jennifer, determined that higher tuitions were needed and that public institutions needed to be able to retain a portion of tuition revenues to finance a "margin of excellence" at their institutions. The policy, instituted with legislative support in 1988, had the following elements.

l. Tuition should represent 30% of the cost of education in public four-year institutions and 25% for community colleges, along with continued tuition waivers for the needy.

2. Expanded tuitions should be retained by the colleges for general educational purposes to provide a "margin of excellence" in programming. These funds were not to be used to support general personnel expenses.

3. The maximum annual tuition increase for resident students in any one year would not exceed 9%. According to the Regents, under this schedule only the state colleges would reach their percent-of-cost tuition goal by FY 93; every other public institution would be well below (around 25% for the University; 22% for the community colleges.)

4. In addition to the formula, the Regents said they would specifically consider increases in the cost of living, the Higher Education Price Index, financial aid and disposable income in setting tuition. In short, "tuition increases should be predictable but not automatic."

5. The Regents said that fees should not exceed 30% of total student charges, set by the institutions under Regents guidelines. However, because fees are set by the institutions, this part of the policy remained voluntary. (Counting fees as well as tuition, the overall charge cap would be 39% of cost at four-year institutions and 32.5% at community colleges.)

6. Finally, the Regents called for increases in student aid and called for an outside tuition review panel to review policy implementation in 1990.

The Regents explicitly rejected a lower tuition policy, writing, "There are some who believe that a better way to assure accessibility is to keep tuitions low or to charge no tuition at all. The net effect of such a policy is to provide a substantial subsidy for everyone who attends a public college or university, regardless of income. In this scheme, the link between the ability to pay and financial aid is severed. Lower tuition is generally associated with a relatively low commitment to financial aid; this policy actually works against access for needier students who require affirmative financial assistance to meet costs beyond tuition."

## 1988 POLICY IMPLEMENTATION

Just as the 1988 tuition policy was put into effect, a dramatic decline in the state economy and budget called into question all the assumptions and intentions of the policy's framers.

The rapidity of the budget decline has been extraordinary: a $160 million loss since 1988 in state appropriations for higher education institutions and students. Where higher education once claimed as much as seven percent of the state budget, its share is dropping below five percent for the first time in recent memory.

Tuition funds that were to be retained by institutions for a "margin of excellence" have instead become what one official called a "margin of survival", used to offset basic campus expenses for supplies, maintenance and insurance. One school complained that the state now considers itself responsible only for personnel and fuel, and that a special fee has to be levied to maintain a library.

There are a number of reasons for the sharp budgetary decline. One has been a reversal in the economic growth that marked the mid-1980's in Massachusetts. Declines in fields such as high technology, brokering, housing and banking led to a surge in unemployment and a significant loss of tax revenues. This occurred just as benefits under other health and social programs such as Medicaid were on the rise. Critics of Governor Michael Dukakis also charged that his Administration was slow to face and then address these signs of budget trouble during and after the period of his presidential ambitions.

The budgetary climate for public colleges was also dampened by what one official termed an "odor of public scandal" that surrounded a number of public college campuses in the late 1980's, including allegations of misuse of funds, racial unrest and stories of personal improprieties. Another official reported that these negative press stories enabled opponents to characterize public higher education as part of "big government" and low tuition as a form of "Reverse Robin Hood", that is, an unwarranted public subsidy of relatively wealthy citizens.

Impact on Tuition

By action of the Regents, tuitions at public colleges were raised an average of 8.5% in 1988-89 and another 8.9% in 89-90. These increases, coupled with declining state revenues, brought the percent of instructional costs covered by tuition up to an average of 26% by 1990. Although a substantial increase, this remained within the 1988 Regents guideline allowing for 9% annual tuition hikes up to a 30% percent cost-of-instruction cap.

At the same time, however, fees levied by institutional boards during this same period increased fully 90%. Some of these fees were described as one-time "emergency" responses to the fiscal situation, but have yet to be rescinded. In some cases, multiple increases were implemented in the same academic year. This was well in excess of the 1988 Regents guideline calling for fees not to exceed 30% of total student charges.

In 1990, with state support continuing its downslide, the Regents enacted the biggest tuition increase thusfar, with tuition hikes ranging from about 15% at the community colleges up to 33% at the University of Lowell. This greatly exceeded the 1988 guideline calling for up to 9% tuition increases, and brought the percent-of-cost covered by tuition to nearly 29% at the state colleges, between 27% and 30% at the state university and about 22% at the community colleges. Since these figures were computed, two other budget cutbacks have taken place, and Regents officials now estimate that tuition and fees are "bumping" and may even exceed Regents percent-of-cost guidelines.

At the same time, the legislature enacted a bill requiring the Regents to present a new tuition policy in 1991 to go into effect in academic year 1992-93. The policy is to include guidelines for the college boards in setting institutional fees, with the extra requirement that fees not exceed 25% of the total of tuition and fees. If implemented, officials hope this policy will help rationalize the state's cost-setting practices.

MASSACHUSETTS RESIDENT UNDERGRADUATE TUITION
AND/OR REQUIRED FEES

| YEAR | MASS. TUITION | MASS. INCREASE |
|---|---|---|
| 85-86 | $1,259 | --- |
| 86-87 | $1,266 | 0.5% |
| 87-88 | $1,299 | 2.6% |
| 88-89 | $1,469 | 13.1% |
| 89-90 | $1,625 | 10.6% |

Source: "1989-90 Tuition and Fee Rates, a National Comparison". Higher Education Coordinating Board, State of Washington, February, 1990. Table 5, p. 7.

Impact on Student Aid

While aid under the general scholarship program rose from $15 million to $84 million by 1988 (the largest percentage increase of any state financial aid program in the country), scholarship levels froze in 1988 and have gone down since then.

In 1989-90, the Regents reported that changes in need analysis formulas enabled them to assure that "needy" students were not impacted by the tuition and fee hikes that occurred at the time. In fact, the Regents reported meeting their goal of making the maximum scholarship award cover 100% of tuition and mandatory fees, except at the University of Massachusetts/Amherst.

At the same time, the Regents recognized that these changes in need analysis formulas, without increases in appropriations, would put a tighter and tighter squeeze on students in slightly higher income categories. To ease the burden on these students, the Regents proposed a new general scholarship category making small grants available to students with $3,000 to $3,500 in expected family contribution. This was enacted in 1990, but funding has not been provided for it and the budgetary situation is bleaker than the year before.

Impact on Access and Quality

Since 1988, enrollments have gone down slightly except at the community colleges. There has been a noticeable drop in day enrollment, made up in part by increases in part-time enrollment. The proportion of Massachusetts high school students going on to higher education is dropping. The only positive note is that minority enrollments rose about three percent during the period, due to an increase in the number of part-time minority students.

In 1989, the Regents reported that enrollment declines appear "to be the result of budget decisions to close courses and sections rather than from increases in tuitions and fees." Administrators repeatedly pointed to cutbacks in course offerings as evidence of a decline in both access and quality engendered by the state budget crisis.

Impact on Independent Colleges

The pattern of state financing has not facilitated relations between the public colleges and independent college interests in Massachusetts. On the one hand, public college officials often complain that the legislature is endemically unsympathetic to public higher education and supports scholarships for independent college students more readily than decent funding for state colleges. Decreases in state institutional appropriations coupled with tuition increases exacerbate this feeling.

Private colleges, on the other hand, have objected vehemently to the method used to calculate instructional costs at public institutions, which does not include most capital costs, reserves and fringe benefits. Because these elements are not included, the "cost of instruction" at public institutions appears lower than it would otherwise be.

This has three effects. First, private college advocates contend, the cost of instruction figure makes people believe that public education is a better bargain than it actually is (in their view) in comparison to private education. Today, the calculation of cost of instruction reaches a high of $3,800; private colleges contend that the figure should be at least 40% higher, or $6,100.

Second, the state scholarship program offers a maximum grant to private college students equal to the cost of instruction at the most expensive public college. If the cost of instruction calculation was higher, the award level for private college students would go up also.

Third, if the cost of instruction calculation was higher, the tuition paid by public college students would also rise under the state's percent-of-cost tuition formula, and the disparity with private college tuitions would therefore decline. Private colleges vigorously deny they seek an increase in public college tuitions, but that would surely result if the cost of instruction calculation is expanded.

The Massachusetts legislature this year indicated its agreement with these arguments by deciding to include indirect costs as part of the instructional cost calculation starting in academic year 1992-93. If implemented, further tuition increases will result from this policy.

## CONCLUSIONS

In summary, Massachusetts instituted its percent-of-cost tuition system in order to raise tuitions and thereby provide revenues to support physical and programmatic improvements at the state's public colleges and universities.

However, facing a budget crisis and lacking a mechanism to tie fees, institutional appropriations and student aid to the tuition formula, Massachusetts was unable to achieve predictability in policy or to support the "margin of excellence" foreseen by those who framed the 1988 tuition policy.

## CHAPTER FOUR: EVALUATION AND CONCLUSIONS

Based on the information gathered from our two case studies and from surveys of the other 14 tuition formula states (which are summarized in an appendix), what can we say about tuition formulas, about the intentions that give rise to them and about the concerns voiced about them?

### BASIC CHARACTERISTICS OF THE FORMULA STATES

First, some basic data about the 16 formula states identified in our survey.

1. As summarized earlier:

-- Thirteen utilize a "percent-of-cost" formula setting tuition to be a percentage of the state appropriation for instructional costs.

-- One state, Kentucky, sets tuition to be the median of tuition as a percent of per capita income among a set of benchmark states.

-- The two remaining states have guidelines that pertain only to tuition increases. California's policy is to limit increases for state universities and colleges to the increase in state general funds for higher education over three years, up to a maximum of 10% a year. South Dakota's policy is to limit tuition and fee increases to the annual increase in the Higher Education Price Index.

2. The impetus for adopting a percent-of-cost tuition guideline was, in almost every case, the state higher education coordinating body. In only a few cases is there specific legislation to back up the percent-of-cost policy.

3. Of the states that adopted percent-of-cost formulas:
   -- Five of the formulas set tuition in the 20% to 25%-of-cost range, as applied to state college and university tuition;
   -- Three were in the 26% to 30% range;
   -- Five were in the above 30% range.

A number of these states adopted lower guidelines for community colleges. (See Table 4.1)

TABLE 4.1: DISTRIBUTION OF TUITION COST RANGES FOR STATES USING PERCENT OF COST FORMULAS

| RANGES | 20-25% | 26-30% | >30% |
|---|---|---|---|
| | AZ (20.5%) | CO (25-30%) | IL (33%) |
| | CT (20-25%) | MA (30%) | KS (25-35%) |
| | FL (20%) | NJ (30%) | MN (33%) |
| | GA (25%) | | TN (30-32%) |
| | VA (20.5%) | | WA (25-33.3%) |

Source: survey conducted by author.

4. The percent-of-cost formulas differed in how they defined "cost", but, in general, all were aimed at isolating the state appropriation for institutional operating expenses.

5. Ten of the percent-of-cost states indicated that tuitions were below the designated percent-of-cost when the policy was put into effect. Clearly, then, most of these policies were initiated with the expectation of raising tuitions.

6. Seven of the states indicated in interviews that tuitions had risen considerably since the policy was put into effect, and four states indicated that tuitions in some cases had gone higher than the designated percent-of-cost. Survey respondents were not asked about tuition trends prior to the institution of a tuition formula policy. In the case of New Jersey, an addendum to the percent-of-cost rule was promulgated allowing institutions to hike tuitions above the designated percentage in times of fiscal crisis.

7. In addition to the two states whose guidelines deal only with tuition increases (California and South Dakota-- see point #1, above), six of the percent-of-cost states include a cap on tuition increases as part of their state tuition plan. These caps include: (1) 0.5% of cost-of-attendance (Arizona); (2) 9% yearly (Massachusetts); (3) inflation, "in the long run" (Illinois); (4) 15% yearly (Connecticut); (5) twice the Higher Education Price Index (Colorado); (6) 6.5% at 4-year institutions, 7.5% at community colleg : (Virginia).

8. Four of the states indicated that state student aid had kept pace with tuition increases, but eight of the states said student aid had not kept pace.

## ADDRESSING THE CONCERNS ABOUT TUITION FORMULAS

Throughout the study, we've discussed concerns that have been raised about the imposition of tuition formulas: that they will lead to higher tuitions, that student aid will not rise commensurately, that state funding will not keep pace, and that, ultimately, access will be adversely affected. Comparing our information on the tuition formula states with national data provides some answers to these questions.

### Do Tuition Formulas Mean Higher Tuitions?

Looking at a national tuition and fee rate compilation prepared by the state of Washington, we find that the tuition formula states are almost equally divided between those with higher than average tuitions and those whose tuitions are lower than average. (See table 4.2.) Similarly, the rate of tuition growth in these states is somewhat below average and they do not rate "badly" on other measures of relative tuition load.

Isolating the 13 percent-of-cost states from the other formula states, we find that the percent-of-cost states are predominantly high tuition states (nine are higher than average and only four are below average.) It would be wrong, however, to conclude that percent-of-cost formulas inevitably lead to high tuitions. This is true because:

-- Many of the percent-of-cost states reported they were high tuition states before they imposed a tuition formula.

-- A significant number remain low tuition states-- as low, in fact, as numbers 42 (Arizona) and 45 (Florida) in state university tuitions.

-- Percent-of-cost tuition formula states are almost equally divided between those with faster than average tuition increases and those with slower than average increases. And these states compare favorably with the norm on other measures of relative tuition load.

In short, tuition formulas, even percent-of-cost formulas, have not resulted in atypical tuition behavior. Similarly, it should be noted that the states with policies limiting tuition increases did not perform very differently from states without such policies.

The two states that only utilize a formula to limit tuition increases-- South Dakota and California-- both had below average tuition when the cost ceiling was instituted, and both have kept tuition and tuition increases below average since then. However, if we shift focus to include the states with percent-of-cost formulas as well as formulas to limit tuition increases-- eight altogether-- we find that half posted tuition increases above the national average since 1985 and the other half were below average.

## TABLE 4.2: TUITIONS IN FORMULA STATES

### All Formula States (16 states)

| | |
|---|---|
| "High" tuition 1989-90 * | 9 states |
| "Low" tuition 1989-90 * | 7 states |

| Tuition increase 1985-89 | Universities | Colleges | Community Colleges |
|---|---|---|---|
| Formula States | 32.6% | 32.8 | 20% |
| National | 33.6% | 33.3% | 28% |

| Student Share of Appropriations (FY 86) | |
|---|---|
| Above Average | 6 states |
| At or Below Average | 10 states |

| Tuition and Fee Revenues Per FTE (FY 86) | |
|---|---|
| Above Average | 8 states |
| At or Below Average | 8 states |

| Tuition Related to Personal Disposable Income Per Capita (1988-89) | |
|---|---|
| Above Average | 6 states |
| At or Below Average | 10 states |

### Percent-of-Cost Formula States (13 states)

| | |
|---|---|
| "High" tuition* | 9 states |
| "Low" tuition * | 4 states |

| Tuition increase 1985-89 | |
|---|---|
| Above Average | 7 states |
| Below Average | 6 states |

| Student Share of Appropriations (FY 86) | |
|---|---|
| Above Average | 4 states |
| At or Below Average | 9 states |

| Tuition and Fee Revenues Per FTE (FY 86) | |
|---|---|
| Above Average | 6 states |
| At or Below Average | 7 states |

Tuition Related to Personal Disposable Income Per Capita (1988-89)

| | |
|---|---|
| Above Average | 4 states |
| At or Below Average | 9 states |

* A state with above average tuition in at least two out of three sectors-- universities, state colleges, community colleges--is termed high tuition for this purpose. Vice versa for low tuition.

Do Tuition Formulas Mean Less or More Institutional Support?

As Tables 4.3 and 4.4 illustrate, the level of state support available to public institutions in tuition formula states does not appear to be significantly different from the nation as a whole.

These findings are true for formula states with high tuitions as well as low tuitions, and for formula states with above-average tuition increases as well as below-average tuition increases. Thus, there is no evidence that formula states are more likely to use high tuition or tuition increases as an excuse to withdraw support from public higher education. Neither could we conclude that tuition formulas act to stabilize or enhance state support for higher education beyond the norm.

## TABLE 4.3: STATE FUNDING FOR PUBLIC HIGHER EDUCATION IN TUITION FORMULA STATES

### All Formula States (16 states)

State funding effort for Public Higher Education (1988-89)

| | |
|---|---|
| At or Above Average | 8 states |
| Below Average | 8 states |

Allocation of resources for Public Higher Education (1988-89)

| | |
|---|---|
| At or Above Average | 9 states |
| Below Average | 7 states |

### Percent-of-Cost Formula States (13 states)

State funding effort for Public Higher Education (1988-89)

| | |
|---|---|
| At or Above Average | 6 states |
| Below Average | 7 states |

Allocation of resources for Public Higher Education (1988-89)

| | |
|---|---|
| At or Above Average | 7 states |
| Below Average | 6 states |

## TABLE 4.4: STATE FUNDING RELATED TO TUITION LEVELS IN TUITION FORMULA STATES

### Formula States with Higher Than Average Tuition

| | |
|---|---|
| State funding effort at or above average | 4 states |
| Below Average | 5 states |

### Formula States with Lower than Average Tuition

| | |
|---|---|
| State funding effort at or above average | 4 states |
| Below Average | 3 states |

### Formula States with Higher than Average Tuition Increases

| | |
|---|---|
| State funding effort at or above average | 4 states |
| Below Average | 3 states |

### Formula States with Lower than Average Tuition Increases

| | |
|---|---|
| State funding effort at or above average | 4 states |
| Below average | 5 states |

### Do Tuition Formulas Affect Student Aid?

Overall, the tuition formula states do not appear to be high student aid states. According to FY 1986 data, only five of the 16 tuition formula states had higher than average state scholarship awards per FTE at public institutions, and only four of the 13 percent-of-cost states had higher than average scholarship levels. (See Table 4.5.)

Although states often institute "high tuition" policies intending to couple tuition increases with "high student aid", the FY 1986 data show formula states with high tuitions, and high tuition increases, actually having below average student aid.

Drawing firm conclusions from this data would be a mistake, because the figures cover three different time periods. However, the data are generally consistent with telephone surveys of the formula states, in which only four states indicated that aid had kept pace with tuition increases.

In other words, the fears of critics may be well founded insofar as student aid benefits not matching tuition increases once formulas are instituted.

## TABLE 4.5: STUDENT AID IN TUITION FORMULA STATES

### All Formula States (16 states)

| Public College Scholarship Awards per FTE (FY 86) | |
|---|---|
| At or Above Average | 5 states |
| Below Average | 11 states |

### Percent-of-Cost Formula States (13 states)

| Public College Scholarship Awards per FTE (FY 86) | |
|---|---|
| At or Above Average | 4 states |
| Below Average | 9 states |

### Formula States with Relatively High Tuitions (1988-89)

| Public College Scholarship Awards per FTE (FY 86) | |
|---|---|
| At or Above Average | 3 states |
| Below Average | 6 states |

### Formula States with Relatively High Tuition Growth (1985-89)

| Public College Scholarship Awards per FTE (FY 86) | |
|---|---|
| At or Above Average | 1 state |
| Below Average | 6 states |

## Do Tuition Formulas Affect Access?

As Table 4.6 illustrates, enrollment growth in the formula states has been in line with the country as a whole. This holds for percent-of-cost states, for formula states with high and low tuition, and for those with higher and lower than average tuition growth.

Thus, it does not appear that the imposition of a tuition formula has an overall adverse effect on access. However, this does not take into account state population trends, nor does this does tell us if access is being diminished among particular groups or if costs are pushing more students into part-time education.

### TABLE 4.6: ENROLLMENT GROWTH IN TUITION FORMULA STATES

All Formula States (16 states)

| Public College Enrollment Growth 1980-87 | |
|---|---|
| Above Average | 9 states |
| Below Average | 7 states |

Percent-of-Cost Formula States (13 states)

| Public College Enrollment Growth 1980-87 | |
|---|---|
| Above Average | 8 states |
| Below Average | 5 states |

## Do Tuition Formulas Bring About Greater Predictability and Rationality in the State Financing System?

Both our case studies and surveys indicated that the most important impetus for the creation of tuition formulas is a desire, usually on the part of state planners, to bring greater predictability and rationality to state financing. Do formulas accomplish that purpose?

Our survey responses indicate that tuitions in the formula states have, in fact, come to cluster at or near the target called for by the formula, with a few above and below. Thus, a certain measure of predictability may have been achieved.

However, because tuitions in the formula states matched so closely with tuitions in the country at large, we have to question whether tuition rates in these states would have been

very different if the formulas had not been imposed. Also, as we have seen, there is no indication that any other aspect of institutional or student financing was made more predictable by the institution of a tuition formula. And, we should remind ourselves, "predictable" does not mean good, or affordable or even rational.

Summing up the results of our case studies, we could probably say that percent-of-cost formulas bring a measure of predictability to state financing if the tuition formula is coupled with interlocking formulas for handling institutional and student support, and if the economy and state budget stay good. But the system may fall apart in important ways if the tuition formula is not coupled with interlocking formulas for handling institutional and student support, and if the economy and state budget turn sour.

What happens when things do "turn sour"? Under the theory of percent-of-cost, tuition rates should actually go down if the state instructional support budget goes down. However, not surprisingly, we found not a single case where tuition went down to match a state budget cut, but quite a few cases where tuition went up when state support went down, as a means of making up for lost revenue. This tells us that in times of economic emergency, tuition formulas may not be adhered to.

Almost by definition, then, a tuition formula cannot be expected to perform by the book when budgets go down. It has been suggested (by Hauptmann, 1990) that one way to deal with this would be to create reserves in good budget times upon which institutions could draw in bad times. Another Hauptman proposal would have states sell bonds to cushion the shortage of tuition revenue during bad times. In fact, colleges in Massachusetts and Connecticut did draw upon reserve funds to soften the impact of state budget cuts in the late 1980's, but not enough to forestall tuition increases.

## CONCLUSIONS

The vagaries of budgeting in uncertain political and economic times have made tuition formula systems attractive to policy-makers. Our findings suggest that the institution of such systems will be neither a panacea or a scourge.

Instituting a percent-of-cost formula may bring a sense of predictability to the institutional funding process, as noted above. It does not appear that such formulas lead to higher than average tuition hikes over the long run. Neither is there evidence that percent-of-cost formulas result in an overall decline of access. Finally, it does not appear that percent-of-cost formulas confer any particular advantage on private institutions.

On the other hand, there is no evidence that percent-of-cost creates a political environment in which the state provides more stable support for public institutions and students, particularly in the event of economic and budget stringencies. And there is good reason for

concern that student aid benefits will not keep pace with any tuition increases engendered by the formula.

If a percent-of-cost formula is being considered, it would make sense, based on our findings, to insure that the system's implementation includes:

1. **An interlocking formula for appropriating funds to public institutions,** in order to guard against the prospect that tuition increases may supplant, rather than supplement, state institutional support. However, the formula should be flexible to moderate tuition increases during periods of substantial growth in state appropriations (with subsequent increases in cost-of-instruction) and likewise to allow for at least stable tuitions during years of lowered appropriations so as to sustain level tuition revenues for institutions.

2. **An interconnecting state policy for setting financial aid benefits** to public college students, again to help insure that aid keeps pace with tuition.

3. **Two protections against steep tuition increases.** These are:

   .. A narrow instructional cost base, the "cost" which determines how high the "percent-of-cost" tuition will be. As noted earlier, independent colleges have consistently pushed to broaden this base in ways that would raise public college tuitions. Also, programs with lower enrollments (more likely in certain graduate programs) should be protected against having artificially high instructional costs.

   .. A realistic cap on tuition increases. We saw that states with tuition caps did not experience unusually low tuition increases (page 26). However, one reason is that the caps were generally set on the high side to give flexibility to administrators. Also, because we've seen that the framers of percent-of-cost formulas usually expect to raise the percent-of-cost covered by tuitions in their states, a cap on tuition increases may well be helpful in keeping increases in the average range, and not above average.

4. **Provision for a follow-up assessment of enrollment trends,** with surveys of potential students, to assure that overall trends do not mask important diminutions in access in particular circumstances.

That said, however, we are still left with a prior question: why percent-of-cost altogether? The policy of percent-of-cost is based on the idea that the individual and the state should reach some accommodation about their respective roles in financing higher education. But there are problems with this formulation.

One problem is that percent-of-cost requires officials to make arbitrary judgements about the relative value of a one-third/two-thirds division of responsibility (as espoused by the Carnegie Commission on Higher Education in 1973), as opposed to one-quarter/three-quarters or dozens of other possible options. It is also legitimate to question whether the state appropriation for instructional costs is the most appropriate measure of the state's role in financing: why not something broader? Finally, percent-of-cost does not place a premium on another consideration: whether quality public education is being made accessible and affordable to the state's citizens.

A state that places its premium on access to a quality public education may decide that affordability is a more appropriate yardstick for determining tuition than percent-of-cost. The Kentucky tuition formula attempts to address this by tying tuitions to per capita income. As noted earlier, resident undergraduate tuition in Kentucky is set at the median of tuition as a percent of per capita income among a group of "benchmark states." Because per capita income in Kentucky is about 80% of the average of the benchmark states, this policy has held Kentucky tuition to about 80% of the benchmark state level as well.

Other formulas could be developed using affordability as a yardstick. As one example, officials could make a determination of what a family at the state's median income (or another appropriate figure) can reasonably afford toward a public education, and then the state could build interlocking tuition, student aid and state support systems around that yardstick. This would be a way of "grandfathering" in that affordable amount in a percent-of-cost tuition formula.

The argument against such a policy is that it confers a subsidy on individuals who make more than the median income (or whatever figure is chosen). But that is ultimately true of any tuition chosen by any system imaginable, and is, in fact, inherent in the provision of most any public service. The virtue of an affordability-based system is that it is grounded in individual economic reality rather than based on a number with no inherent connection to ability to pay.

Perhaps the last word on this subject should be given to the Massachusetts official who, after recounting everything that had gone wrong in the state since instituting its tuition system, said, "Well, at least it gives us a common language, a way to carry on a conversation about tuition and state support."

Percent-of-cost tuition formulas are serving this purpose in an increasing number of states, but, as we've suggested, there are also other languages that could be employed and other ways to carry on the conversation.

## APPENDIX: CAPSULE SUMMARIES OF THE TUITION FORMULA STATES

### ARIZONA

Set by: Arizona state governing board in 1989. The Arizona state constitution includes a provision stating that tuition will be kept as nearly free as possible.

The Policy: The state governing board sets tuitions at a value equal to:
(1) 20.5% of the cost of education (based on per capita state appropriations plus enrollment trends); and (2) if the board so decides, an additional yearly increase of up to 0.5% of the cost of education, moving to a cap of 22.5% of the cost of education. In deciding on this second factor, the board looks at unmet financial need and the tuition in other states (under a guideline of not exceeding the lower 1/3 of all state tuitions.)

In Practice: Arizona has one of the highest proportions of residents who attend school in state. To keep tuition hikes modest for them, the governing board has either not implemented the 0.5% increase option or has altered the cost of education formula in ways that achieve the same result. State student aid benefits (primarily in the form of tuition waivers) have risen much faster than tuition since the policy was implemented.

Tuition rank: #42 for universities; #30 for state colleges; #42 for community colleges. Undergraduate tuition increases from 1985-90 have been above the national average, except for community college students.

### CALIFORNIA

Set by: State legislation in 1985.

The Policy: Applies only to tuition increases, not tuition rates. Resident fee increases for state universities and colleges may not exceed increases in state general funds for higher education over three years up to a maximum of 10% per year. No such policy regarding community colleges.

In Practice: The policy was enacted in reaction to sharp increases in the early 1980's. Since then, increases hit 10% only in 1987-88.

Tuition rank: #33 for universities, #50 for state colleges, #50 for community colleges. Increases in 1985-90 resident undergraduate tuition are below the national average.

## COLORADO

Set by: State governing board in 1981-82, with revisions since.

The Policy: With one exception (the Colorado School of Mines), institutions may set undergraduate resident tuition to cover 25-30% of instructional costs. The maximum percentage increase for undergraduate resident tuition cannot exceed twice the Higher Education Price Index for the previous year.

In Practice: Until 1988, the guidelines were only loosely observed; tuition rates were informally negotiated with the legislature. Since 1988, the guidelines have been generally observed; some schools are slightly below, one over the 30%.

Tuition rank: #18 for universities, #27 for colleges, #22 for community colleges. Increases in resident undergraduate tuition were lower than the national rate from 1985-90.

## CONNECTICUT

Set by: State governing board policy, adopted in 1985, for approving yearly tuition requests from public institutions in the state.

The Policy: Tuition should represent 20-25% of costs, based on the two year previous appropriation. Tuition increases should not exceed 15% yearly.

In practice: Tuitions represented about 15-16% of cost when the policy was initiated, and are about 22% of cost now. In the last two years, as state budgets decreased, U. Conn tuition rose 15% per year and now slightly exceeds 25% of cost. Percent of cost covered by tuition is expected to increase when these low budget years become the base of the funding formula. Connecticut institutions maintain a tuition reserve, which was intended to support excellence initiatives, but which has also been brought to bear to lessen tuition increases in times of shrinking support. Institutions must set aside 15% of tuition increases to support increases in student aid, which have generally kept pace with tuition hikes for public, but not private institutions.

Tuition rank: #21 for universities; #27 for state colleges, #20 for community colleges. Between 1985-90, resident undergraduate tuitions rose faster than the national average.

## FLORIDA

Set by: State board of regents in 1985-86.

The Policy: The board recommends that tuitions represent 25% of the prior year cost of education.

In Practice: Tuitions represented roughly 20% of cost of education when the goal was set. Since then, the state legislature has established fees for resident undergraduates at levels well below 25%-- counting increases in nonresident tuition, tuition is still about 20% of cost now. State appropriations have kept pace with tuition increases, and percentage increases in need-based student aid in recent years have exceeded percentage increases in tuition.

Tuition rank: #45 for universities, #40 for colleges, #37 for community colleges. Despite the state's low tuition rank and the legislature's reluctance to raise tuitions to meet a 25%-of-cost goal, increases in the activity and health fees set by state universities and colleges caused their resident undergraduate cost increases to rise above the national average in 1985-90. Resident cost increases were well below the national average for community colleges.

## GEORGIA

Set by: State governing board in 1963, which sets tuitions.

The Policy: Resident undergraduate tuitions are to be set at 25% of instructional costs.

In Practice: The percent of cost covered by tuition fell from about 25% to 19% by mid-1980's. Then, the governing board implemented fee increases of about 15% per year until 25% was reached. The last 15% increase was in FY 1985. Increases have been about 4% in last few years. State aid has increased over the same period, but schools report that state student aid benefit increases have not kept pace.

Tuition rank: #23 for universities, #29 for state colleges, #18 for community colleges. Undergraduate resident tuition increases for 1985-90 were below the national average.

## ILLINOIS

Set by: State coordinating board for public universities and colleges since 1979. Statute governing community college tuition first enacted in 1965.

The Policy: Resident undergraduate tuition should not exceed 1/3 of instructional costs. For state universities and colleges, tuition increases should not exceed inflation in the long run, but short-term deviations may be necessary.

In practice: Tuition has risen faster than state support, CPI, HEPI or family income. Tuition above 33% at many institutions. Tuition increases approximated HEPI until FY 88. No increases planned in FY 91.

Tuition rank: #6 for universities, #6 for state colleges, #23 for community colleges. Except for resident community college students, tuition increases for 1985-90 have been above the national average in all categories.

## KANSAS

Set by: State governing board in 1966 for state universities and colleges.

The Policy: Resident undergraduate tuition should fall within a fee-cost ratio of 25-35%.

In practice: The ratio was originally set at 25%, but had declined to around 20% by the early 1980's. It rose dramatically to the 25% level by FY 86 to allow a "margin of excellence." Ratios are now around 28%. Over the period, tuition increases have been about the same or slightly higher than state appropriation increases. State student aid is not a major factor for public college students in Kansas.

Tuition rank: #39 for universities, #29 for state colleges, #32 for community colleges. Resident undergraduate tuition increases between 1985-90 below national average.

## KENTUCKY

Set by: State coordinating board in 1982, which establishes tuitions by statutory authority.

The Policy: Resident undergraduate tuition is set at the median of tuition as a percent of per capita income among "benchmark states."

In practice: Because per capita income in Kentucky is about 80% of the average of the benchmark states, this policy has held Kentucky tuition to about 80% of the benchmark state level as well. Tuition now represents about 13% of the total revenues of Kentucky colleges ("total revenues" includes research and many other factors in addition to instructional costs). State appropriations have risen throughout the period, but state student aid benefit increases have not kept pace with increases in tuition.

Tuition rank: #34 for universities, #38 for state colleges, #40 for community colleges. Undergraduate tuition increases between 1985-90 were below the national average in all categories.

## NEW JERSEY

Set by: State governing board since 1977.

The Policy: Undergraduate resident tuition should not exceed 30% of E&G expenditures. During periods of fiscal crises and declining state appropriations, institutions may exceed 30%.

In practice: Institutions have generally been at the 27-33% level, and increases kept in line with appropriations hikes. For two years, budget decreases (3.3% and 10.1% respectively) required implementation of the exception to the 30% rule noted above. Institutions drew on reserves to limit tuition increases, and last year for the first time, student aid did not keep pace with tuition increases.

Tuition rank: #4 for universities, #3 for state colleges, #10 for community colleges. Undergraduate tuition increases for residents between 1985-90 have been above the national average.

## SOUTH DAKOTA

Set by: State governing board in 1989 for state colleges and universities. (Community colleges locally operated.)

The policy: Tuition and fee increases together will not exceed the Higher Education Price Index.

In practice: This has been followed in practice. At the same time, student aid benefits have not risen with tuition.

Tuition rank: #27 for universities, #20 for state colleges. Tuition increases from 1985-90 have been below the national average.

## TENNESSEE

Set by: State coordinating board, as a guideline for college governing boards, in 1980.

The Policy: Resident 4-year college undergraduate tuitions are to be set at 30-32% of state appropriations; resident 2-year college tuitions are set at 24-26% of state appropriations. Within these benchmarks, consideration is also given to tuition levels at peer institutions.

In practice: State appropriations have increased about the same percentage as tuition over the years, and state student aid benefits have kept pace with or exceeded tuition increases.

Tuition rank: #35 for universities, #35 for state colleges, #29 for community colleges. From 1985-90, tuition increases at state universities and colleges have been slightly above the

national average. Resident community college tuitions increased faster than the national average, while nonresident community college tuitions increased more slowly than the average.

## VIRGINIA

Set by: Statute first enacted in 1976 for 4-year institutions, 1985 for 2-year institutions. Most 4-year institutions and the community college board have some flexibility in fixing rates within general guidelines.

The Policy: Resident undergraduate tuitions at 4-year institutions are not to exceed 25% of E&G costs (less research and public service); 75% of E&G for nonresidents. At 2-year institutions, resident tuitions set at 20% of E&G; 100% for nonresidents. (4-year college policy originally called for 30% of E&G combined for residents and nonresidents. The overall percentage of E&G for residents and nonresidents today is about 35%.)

In practice: State funding has increased substantially since the tuition formula was instituted, but not as quickly as tuition. Student aid benefits have also risen more slowly than tuition. In 1990, a planned 5% reduction in institutional appropriations was to be offset by a 2.5% extra student surcharge. To place limits on tuition growth, the Governor and legislature imposed a 6.5% limit on total increases for in-state students at 4-year colleges and a 7.5% limit on total increases for community college students.

Tuition rank: #8 for universities, #2 for state colleges, #27 for community colleges. Resident undergraduate tuitions rose slower than the national average between 1985-90.

## WASHINGTON

Set by: Statute first enacted in 1977.

The Policy: All tuitions set as percent of cost calculated on the previous biennium. For community colleges-- 23% resident; 100% nonresident. For undergraduates at state colleges, 25% resident and 100% nonresident. For undergraduates at state universities, 33.3% resident, 100% nonresident.

In practice: Percent of cost used to be lower, was raised in early 1980's in time of economic problems. By law, 24% of tuition increases are put back into student aid.

Tuition rank: #25 for universities, #23 for state colleges, #25 for community colleges. Between 1985-90, undergraduate tuition increases have been lower than the national average.

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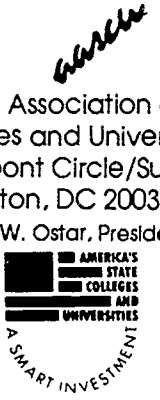


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