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ABSTRACT

This memorandum describes the calculations used to figure the instructional subsidy for postsecondary education in Ohio, focusing on why the model operates as it does and the implications of the current funding model. The two principle factors in the instructional subsidy model are institutional enrollments and actual costs. The model begins with the cost estimates for 15 different academic program categories, adjusted for inflation and multiplied by anticipated enrollments, which yields an estimate of total institutional costs in five major cost elements. Final estimates result from subtracting student fees and other local revenues from total expected spending. Illustrative data are provided for a fictional institution with an estimated enrollment of 1,000 students. This formula-driven mechanism for state funding is based on legislative decisions made nearly three decades ago and is relatively complex due to the varied size and type of institutions funded under the model and the need to moderate funding declines for institutions experiencing temporary enrollment declines. It is concluded that although complex, the instructional subsidy model allows the General Assembly to set general levels of overall spending for public postsecondary education relatively quickly and easily. (MDM)

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STATE FUNDING FOR PUBLIC HIGHER EDUCATION: THE INSTRUCTIONAL SUBSIDY

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The Legislative Office of Education Oversight (LOEO) serves as staff to the Legislative Committee on Education Oversight. Created by the Ohio General Assembly in 1989, the Office is to conduct studies of education-related activities funded wholly or in part by the state of Ohio. This research memorandum is an analysis and summary of higher education's instructional subsidy.

This is a report of the LOEO to the Legislative Committee on Education Oversight. ***Conclusions in this report are those of the LOEO staff and do not necessarily reflect the views of the Committee or any of its members.***

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LEGISLATIVE OFFICE OF EDUCATION OVERSIGHT

STATE FUNDING FOR PUBLIC HIGHER EDUCATION: THE INSTRUCTIONAL SUBSIDY

The General Assembly has supported public higher education since 1804, when it created Ohio University. The approach to assistance has gone through numerous changes in method and amount. Currently the "instructional subsidy" is the lifeblood of public postsecondary education in Ohio, allocating nearly $1.2 billion from General Revenue Fund (GRF) appropriations to public colleges and universities in fiscal year (FY) 1990 and almost $1.3 billion in FY 1991. The instructional subsidy accounts for more than 70 percent of the state's total GRF support for postsecondary education.

The instructional subsidy calculations are used by the Board of Regents to develop the biennial budget request, and then to distribute the funds appropriated among the more than 60 public institutions of postsecondary education in Ohio.

Members of the General Assembly have raised questions about these calculations. Major issues have been:

* The model is very complex; how does it actually work, and does it need to be that complex?

* Does the model allow the General Assembly adequate control over either spending or policy decisions in postsecondary education?

This Research Memorandum was prepared by the Legislative Office of Education Oversight (LOEO) at the request of the Legislative Committee on Education Oversight to provide a preliminary look at these issues. It is not an in-depth analysis, and does not contain recommendations. Drafts were reviewed and commented on by the Ohio Board of Regents, the Inter-University Council, the Ohio Technical and Community College Association, and the Legislative Budget Office. However, this is a report of the LOEO staff to the Legislative Committee on Education Oversight, and does not necessarily reflect the views of the Committee or any of its members.

The memorandum begins with a brief and simplified description of the model's calculations, using a hypothetical example (pp. 2-5). The next section relates some of the history of the formula and explains why the model operates as it does (pp. 6-7). Finally, the memorandum describes some of the implications of the model, in terms of the two questions presented above (pp. 7-8).

Calculations

The two principal factors in the instructional subsidy model are institutional enrollments and actual costs. These are broken down into a number of program categories and then "buffered" in cases of enrollment decline. The formula includes only "instructional and general" (I&G) expenditures. In essence, this means that the state GRF contribution will be directed only toward instruction and departmental research.

The model does not incorporate costs of activities that Regents feels should be supported by other sources. These include auxiliary enterprises such as hospitals, dormitories, and intercollegiate athletics; public service; separately budgeted research; and scholarships and fellowships.

All institutions annually report estimated expenditures to the Board of Regents. Regents uses the even-year estimates as the basis for its biennial budget request. This request generally equals the sum of all institutions' estimated expenditures, adjusted by Regents' estimates of inflation. The process does not incorporate review of expenditures, so the formula will invariably yield increased appropriation requests unless institutions' statewide estimated expenditures or enrollments decline.

Broadly:

--The model begins with cost estimates for 15 different academic program categories, groupings which are based on the programs' statewide average costs;

--These costs are adjusted for inflation, using percentages Regents selects;

--Program costs are multiplied by anticipated enrollments in each, which yields an estimate of total institutional costs in five major cost elements; and

--Final estimates of the total state instructional subsidy (the budget request) result from subtracting student fees and other local revenues from total expected spending.

A simplified example of the formula calculations is shown on page 3.

Academic program categories. Assumed expenditures are separated into 15 cost-related categories of academic programs. The rationale for this category system is that institutional expenditures will vary depending on their mixes of undergraduate, graduate and professional students and disciplines. There are eight undergraduate categories (General Studies I, II and III, Baccalaureate I, II and III, and Technical I and III), five graduate (Masters and Professional I, II and III, and Doctoral I and II), and two medical (I and II).

EXAMPLE

"SMALLTOWN STATE UNIVERSITY"

This illustration demonstrates how the Regents would calculate the instructional subsidy entitlement for a hypothetical institution, Smalltown State University, that had full-time equivalent (FTE) enrollments in only the General Studies II level. This is a simplified example that ignores some of the finer points of the formula. For this university, General Studies enrollments are above its base-year enrollments. If the university's current enrollments had been below its base-year enrollments, the Regents would have "buffered" the institution. Essentially, the Regents does this by recognizing only part of the enrollment decline.

Step 1--Smalltown reports a total of 1,000 summer and fall term FTE enrollments to the Board of Regents. These are higher than the university's base-year enrollments.

Step 2--Regents calculates total General Studies II expenditures for Instruction, Support Services, Student Services, Library Acquisitions and Plant Operation and Maintenance (POM) using statewide cost assumptions and weighting factors. The dollar amounts are all listed in Amended Substitute H.B. 111. The first three sums are estimates of what it will cost in FY 1990 to provide Instruction, Support Services and Student Services to each General Studies II FTE. For Library Acquisitions, the "65" is an estimate of the number of instructional programs at the university, and $979 is the estimate of how much would need to be spent for library acquisitions for each of these programs. The square footage for the final step is derived from space reports made to the Regents for the university. The steps are as follows:

(a) Multiply 1,000 FTEs by $1,559 (Instruction);

(b) Multiply 1,000 FTEs by $1,439 (Support Services);

(c) Multiply 1,000 FTEs by $260 (Student Services);

(d) Multiply 65 by $979 (Library Acquisitions);

(e) Multiply per-square-foot allowances for each type of room by square footage of each (POM); and

(f) Total all of these products.

Assume this sum to be about $4 million.

Step 3--Subtract expenditures associated with ineligible (out-of-state) enrollments. To do this, divide $4 million by 1,000, then multiply this quotient by the number of ineligible enrollments. If Smalltown has ten ineligible FTEs, Regents would subtract $40,000 ($4 million divided by 1,000, times 10).

Step 4--Subtract instructional fees that Regents assumes are paid by students. This amount equals $2,094 (the Regents statewide undergraduate fee assumption) multiplied by 990 (the number of subsidy-eligible FTEs), or $2,073,060.

Smalltown State University's subsidy allocation is then $4 million, minus $40,000, minus $2,073,060, or $1,886,940.

Inflation factor. The inflation assumptions have a significant impact on the Regents' request, since they are applied against expenditures of several billion dollars. As a control on overall expenditures, the legislature can change the inflation assumptions, but has not often chosen to do so. The Office of Budget and Management usually uses inflation assumptions lower than Regents' in the budget it transmits to the General Assembly.

Institutional cost elements. The instructional subsidy formula builds its estimates from five major elements: Instruction, Support Services, Student Services, Library Acquisitions, and Plant Operation and Maintenance. Assumed expenditures for Library Acquisition are based on a "weighted program index," designed as a proxy for the number and relative costs of the different instructional programs institutions operate. Those for Plant Operation and Maintenance are based on the amounts and types of space the institution owns or operates.

The other three elements (Instruction, Support Services, and Student Services) are related to enrollments. Instruction and Support Services are by far the most important of the model's components, together accounting for 80 percent of the model's total estimated expenditures.

Enrollments. Each summer and fall term, every institution reports full-time equivalent enrollments (FTEs) for each of the 15 cost-level academic program categories. FTEs are based on credit hours of instruction, not student head counts. One FTE equals 45 credit hours for summer term, and 15 credit hours for fall; the different weights are to allow for the fact that enrollment is not reported in winter or spring terms.

Regents multiplies enrollments in each category by the category's assumed expenditures in the three enrollment-related cost elements (Instruction, Support Services, and Student Services). The totals of these products are added to the figures for the two non-enrollment-related categories (Library Acquisitions and Plant Operation and Maintenance) to arrive at each institution's total estimated I&G expenditures.

Fee assumptions. The institution's estimated allocation is calculated by subtracting from total estimated instructional and general expenditures the amount assumed to be provided by students' instructional fees. There are five separate "fee assumptions," representing the amount of local contribution expected for five different clusters of academic programs, grouped by program cost. There are separate fee assumptions for undergraduate, graduate, Medical I (veterinary medicine, dentistry and optometry), Medical II (physicians), and technical enrollments.

Unless specifically directed otherwise, the Board of Regents generally assumes that any amendment to the instructional subsidy appropriation is to be implemented through proportional increases or reductions in fee assumptions. The General Assembly could give the

Regents specific instructions in setting fee assumptions. Depending on how assumptions were changed, the effect could be to change the total amount of the instructional subsidy appropriation or to alter individual institutions' shares of the appropriation, or both.

In the current biennium, and several times in the past, the General Assembly has capped instructional fee increases. Capping fee increases generally raises the amount of the requested GRF appropriation, since the process by which Regents generates its request assumes that all anticipated expenditures are funded only from student fees and the GRF appropriation.

The Regents' instructional subsidy budget request then simply equals estimated I&G expenditures (that is, current estimated expenditures multiplied by an inflation factor), minus local funds, called "students' instructional fees." After appropriation action is completed, the formulas are calculated again to yield each institution's allocation.

Buffering. This is a considerably simplified summary of how the Board of Regents determines instructional subsidy for each institution. The most significant complicating factor is buffering, designed to soften the impact of declining enrollments. The idea behind buffering is that some costs are fixed in the short run and so cannot be reduced immediately when enrollments fall. Other costs are variable, and therefore can be pared more quickly.

Decline is determined by comparing the institution's current enrollments to those of a "base year." When the model was created in FY 1982, the base year was FY 1980 for all institutions. The base year is still FY 1980 for institutions with stable enrollments. Base years for growing or declining institutions are revised each year to move the base year closer to current enrollments. If the legislature so desired, it could establish different base years or alter the percentages of costs assumed to be fixed and variable.

The effects of buffering can sometimes seem odd at first glance. If a program category (such as General Studies I) is being protected from the effects of declining enrollment and its enrollments begin to rebound, the formula reduces the state subsidy to the program it is supposed to be protecting. The assumption is that the instructional fees generated by the increased enrollments reduce the need for protection.

In its deliberations for its next biennial budget request, Regents is considering further reducing the effects of buffering in the model.

Background

Ohio's approach to funding its public postsecondary education institutions reflects decisions made almost three decades ago about how those institutions were to be governed. At that time, the General Assembly favored a relatively decentralized form of

administration, with the Board of Regents as a central coordinating body and minimal legislative oversight. For that reason, a formula-driven funding mechanism was deemed appropriate.

In a series of "consultations," Regents and the institutions devised the funding formulas for presentation to the General Assembly. Biennial consultations continue to revise and refine the model.

Early formulas used under this approach relied exclusively on an institution's enrollments to determine its share of state GRF appropriations. However, a few institutions experienced sharp enrollment declines, and the system as a whole was expected to see similar decreases in the 1980s. In FY 1982 the model was changed from one driven almost exclusively by enrollments to one in which other factors play a part. Although enrollments are still the primary determinant in the calculations, the model uses the other factors described above to moderate the effect of declining enrollments and to recognize the costs of different institutions' activities and programs.

Subsequently a few institutions did see enrollment reductions and were successfully protected by the formula, but the system as a whole did not decline. This left the state with a relatively complex method for calculating and distributing state funds for public postsecondary education. The method is also significantly different from that used to develop budgets for other state entities.

Complexity. The instructional subsidy calculations are complex for two basic reasons. First, the formula is intended to address the situations of all the public postsecondary institutions at once. These are as diverse as relatively small community colleges, Ohio State University, free-standing medical schools, and many institutions of intermediate sizes and varying missions. Second, as noted earlier, a relatively large number of factors and weightings are used to moderate the effects of anticipated enrollment declines.

Complexity itself is inherently neither desirable nor undesirable. However, more complex systems are more likely to act in unexpected ways in response to change. This means that policymakers cannot necessarily count on having their policy decisions implemented as intended. On the other hand, it also means that individual institutions and departments cannot easily manipulate the model to serve their own ends.

The complexity of the formula, chiefly the buffering provisions, can make planning more difficult at the campus level. An institution's allocation depends not only on its total enrollments, but where the enrollments fall among program categories. A large institution with many program categories could have highly accurate overall enrollment estimates, yet receive millions of dollars more or less than its subsidy estimate if it

guesses incorrectly how students will be distributed among programs. This is not just a theoretical possibility; it actually happens.

Budget development. Most state agencies prepare budget requests based on their anticipated workload for the coming fiscal period, and these budgets are then scrutinized by the Office of Budget and Management and by the General Assembly. If the governor or the General Assembly believes an agency's priorities should be changed, funding can be redirected to achieve those policy decisions. If elected policymakers believe the spending within one division of an agency has been excessive, appropriations to that division can be reduced. This is true even for agencies almost fully supported by the federal government or by fees the agencies generate themselves.

Public institutions of higher education, on the other hand, are funded all at the same time, using a formula that assumes their current expenditures to be appropriate. The General Assembly can adjust overall funding to the system by making alternative assumptions about inflation or enrollment, but cannot otherwise influence spending patterns within or among institutions. This is in keeping with the decentralized approach to postsecondary decisionmaking in effect in Ohio; each institution's board of trustees decides how to expend funds that are not otherwise earmarked.

Observations

The following observations can be made from even this simplified description of the process. The Legislative Office of Education Oversight has not analyzed any recommendations to address these issues. The Legislative Committee on Education Oversight may or may not wish to ask the LOEO for a full study of the instructional subsidy model.

1. The instructional subsidy model allows the General Assembly to set general levels of overall spending for public postsecondary education relatively quickly and easily.

2. The instructional subsidy model is very complex. The complexity was introduced largely to deal with an anticipated problem--declining enrollments--that never materialized for the system as a whole, although the model has effectively protected some institutions that did see declines. Additional complexity is introduced because the formula must account for a large number of very diverse institutions. However, it would be difficult, and probably impossible, for an individual institution or department to manipulate the formula directly for its own benefit.

3. The model does not contain or assume external evaluation of institutions' expenditure levels. As long as institutions' estimated expenditures rise, and enrollments do not fall, the model will prescribe requests for increased appropriations.

4. Since institutions' expenditures are assumed to be fixed, student fee increases cannot be controlled by law without increasing

the instructional subsidy appropriations, reducing inflation or enrollment estimates, or a combination of both. If there is no basis for doubting the economic or demographic data used to set inflation and enrollment estimates, changing those estimates to achieve fiscal control seems at worst arbitrary and at best indirect.

5. The model's calculations are based on specific assumptions about spending by program and by cost element. These specific assumptions are what give the model its complexity. However, Regents allocates funds to each institution in a lump sum, so actual spending need not follow the pattern assumed by the formula. Neither the governor nor the General Assembly nor even the Regents knows how the funds will actually be spent once they are disbursed to the campuses. Institutional boards of trustees make these decisions.

6. The model does not allow for much policy input by the legislature. If the General Assembly wanted to fund more instruction or more maintenance or less administrative overhead--either statewide or at specific campuses--the instructional subsidy methodology provides no way to achieve this. The General Assembly would have to pass specific laws to implement its policies.

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