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# The effects of state political interests and campus outputs on public university revenues

Robert C. Lowry \*

*Department of Political Science, Michigan State University, 311 South Kedzie Hall, East Lansing, MI 48824-1032, USA*

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## Abstract

Using data for 428 individual campuses in all 50 states, I show that state government funding and tuition and fee revenues at public universities depend on both political and economic factors. State government funding varies depending on the relative size of various interest groups in each state, as well as the ability of public universities to present a united front when dealing with state government. Differences in state government funding at specific campuses reflect differences in the net political benefits to political officials from the supply of instruction, academic research and public service. Net tuition and fee revenues are higher at campuses that receive less state government funding, but also higher in states where public universities have more financial autonomy. The price of attending college thus depends in part on whether the relevant decision makers are state government officials or university administrators. © 2001 Elsevier Science Ltd. All rights reserved.

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## 1. Introduction

Although public universities obtain revenues from a wide variety of sources (Noll, 1998), by far the most important sources of unrestricted revenues remain state governments and students. For campuses analyzed in this paper, the median share of all unrestricted revenues obtained from these sources was 78 percent in 1994–95, and 93.5 percent if I exclude stand-alone activities such as hospitals and federal research centers. Revenues from both of these sources relative to enrollments vary widely across campuses. State government funding per full-time equivalent (FTE)<sup>1</sup> student ranged from US\$17,102 at the

University of Alaska-Fairbanks to just US\$935 at Castleton State College in Vermont. Net tuition and fee revenues per FTE student ranged from US\$10,885 at the University of Vermont to just US\$871 at Northwest Oklahoma State University (National Center for Education Statistics, 1994–95).

Comparisons based on dollar amounts per FTE student are not very enlightening, however, as revenues from both sources should vary depending on a number of political and economic factors. State government funding for public universities should depend initially on available government resources and the political costs and benefits to legislators and governors from allocating scarce resources to public higher education. Funding for particular campuses should also depend on the mix of students and the extent to which each campus supplies public and quasi-public goods such as academic research, agricultural extension services, and public policy advice. Tuition rates obviously differ for state residents and nonresidents, and should also depend on the

\* Tel.: +1-517-353-3294; fax: +1-517-432-1091.

*E-mail address:* lowry@pilot.msu.edu (R.C. Lowry).

<sup>1</sup> Throughout this paper, full-time equivalent enrollment is measured as the number of full-time students plus one-third the number of part-time students.

amount of state government funding and students' willingness to pay for instruction at each campus. Moreover, public universities in different states enjoy different degrees of autonomy over financial matters (Volkwein & Malik, 1997). Tuition and fee revenues may depend on whether the relevant decision makers are state government officials or public university administrators.

Nonetheless, relatively little research exists explaining revenues from state governments and students at individual public university campuses. Virtually all previous studies of state government funding are limited to major research universities, or use data aggregated to the state level. Many of these studies do not ask whether state government funding is affected by political interests, or whether funding for individual campuses is affected by the supply of public and quasi-public goods. Studies that simultaneously analyze state government funding and tuition revenues are even less common. Most previous studies omit tuition revenues entirely, while others assume that tuition rates are set independent of state government funding.

I estimate a system of four equations in order to determine the effects of political interests and campus outputs on revenues at 428 public university campuses in all 50 states. I estimate revenue equations for state government appropriations, grants and contracts, and net tuition and fee revenues. I also estimate equations for separately budgeted spending on research and public service to non-academic constituencies, in order to allow for simultaneous causation between spending and revenues.

Given tax revenues, state government funding for public universities is lower in states with many elderly residents, who receive few or no direct benefits from public universities but do benefit from other government programs. State government funding is also lower in states with large private higher education sectors, and where a large number of university governing boards limits the ability of public universities to present a united front when lobbying on their own behalf. The marginal effects of campus outputs on state government funding vary depending on the extent to which they benefit important state constituencies, and perhaps a tendency for university administrators and faculty to expand certain programs rather than maximize revenues. The marginal effect of state resident undergraduate enrollment exceeds the effects of nonresident undergraduate and graduate and professional enrollments, while the marginal effect of spending on public service to nonacademic constituencies exceeds that of spending on academic research.

Net tuition and fee revenues also reflect both political and economic considerations. Controlling for enrollments, input prices, and students' willingness to pay, net tuition and fee revenues are higher at campuses with limited state government funding, but also higher in states where public university campuses have more autonomy over financial matters. This implies that uni-

versity administrators are less concerned with maintaining low tuition rates than are state legislators and executives.

Finally, the determinants of separately budgeted spending on academic research are somewhat different from the determinants of spending on public service. Controlling for revenues and land-grant status, spending on research is a complement to graduate and professional instruction, but a substitute for undergraduate instruction. Spending on public service to nonacademic constituencies is independent of enrollments, but tends to be higher in states where farming is an important part of the state economy.

Section 2 summarizes previous research on state government funding of public universities. Section 3 discusses my model specification and the expected effects of my explanatory variables. Section 4 presents the empirical analysis, and Section 5 summarizes key findings and implications.

## 2. Previous research

Previous empirical studies of state government funding of public universities have not produced a consensus specification. They differ initially in the unit of analysis and measurement of the dependent variable. Borchherding and Deacon (1972), Clotfelter (1976), and Goldin and Katz (1999) examine statewide government funding per capita; Strathman (1994) uses statewide appropriations per student; and Peterson (1976) examines both.<sup>2</sup> Hoenack and Pierro (1990) examine appropriations to the University of Minnesota divided by state voting-age residents over a period of 34 years, while Coughlin and Erekson (1986) analyze appropriations per student for 42 public universities in 1980–81. Cohen and Noll (1998) use panel data to examine the annual percentage change in appropriations to 83 public research universities, and Leslie and Ramey (1986) examine appropriations to individual public universities, controlling for enrollment as an explanatory variable. Lindeen and Willis (1975) examine correlations between various measures of statewide funding and political, social or demographic variables.

These studies establish that state government funding for public universities increases as a function of state government resources, although the variables used to measure resources also differ. Borchherding and Deacon

<sup>2</sup> Most of these studies simply refer to "appropriations," without being explicit about whether the dependent variable also includes state government grants and contracts. I include all state appropriations, grants and contracts, but in practice, about 92 percent of these revenues for campuses in my data set are unrestricted appropriations.

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