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More "Private" than Private Institutions: Public Institutions of Higher Education and Financial Management

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This research compares the status of managerial accounting practices in public four-year colleges and universities and in private four-year colleges and universities. The investigators surveyed a national sample of chief financial officers (CFOs) at two points in time, 1998-99 and 2003-04. In 1998-99 CFOs representing private institutions reported adoption of managerial accounting practices at a rate significantly higher than CFOs representing public institutions in pricing and performance measurement. In 2003-04 CFOs representing public institutions reported adoption of managerial accounting practices at a rate significantly higher than CFOs representing private institutions in budgeting, performance measurement, organization behavior, and outsourcing.

Objectives

The primary objective of this research was to compare the status of managerial accounting practices in public four-year colleges and universities with those in private four-year colleges and universities at two points in time, 1998-99 and 2003-04. A further objective of the research was to interpret the findings in the context of an anticipated evolutionary change in institutional control.

Context

In the contemporary experience of American higher education, it is not the power of the market (Trow, 1988) that is novel, but the changing construct of institutional

control (Ehrenberg, 2006; Lyall & Sell, 2006). Private institutions always have relied on philanthropy (Miller, 1999), whether from individuals or from a church, and charge tuition as a means of covering the remaining cost or to increase institutional reserves. Many public institutions have undergone a metamorphosis. Duderstadt (2007), former president of the University of Michigan, emphasized that "during the last half of the twentieth century, the University of Michigan was forced to evolve from 'state-supported' to 'state-assisted' to 'state-related' to what might only be characterized as 'state-located' " (p. 145). Hence, public colleges and universities are no longer indemnified by state appropriation and forced to maximize tuition, grants and contracts, and donations.

Tuition and State Appropriations

Tuition at public four-year institutions in the 2003-04 academic year increased at the highest rate in three decades, an average of 14 percent more than the prior year (Farrelle, 2003). The increase for those institutions in 2004-05 was 10 percent (Hoover, 2004). Public colleges and universities have implemented large tuition increases to compensate for falling sources of revenue which historically have subsidized price, notably state appropriations.

A strong commitment by states to their public colleges and universities made possible a substantial expansion of educational opportunity in the period following World War II. The last two decades of the twentieth century also were marked by rising state appropriations. State support per student for public institutions increased 24% in real (inflation-adjusted) dollars from $6,467 in 1980 to $8,044 in 2000 (Finney & Kelley, 2004).

State appropriations to public colleges and universities fell 2.1 percent from the 2002-03 fiscal year to the 2003-04 fiscal year, the first decline in 11 years. Appropriations increased by 3.8 percent for the 2004-05 year (Hebel, 2004). The percentage of total revenues derived by public institutions of higher education from state appropriations has fallen to about 30 percent (Lyall & Sell, 2006).

Levels of state support vary widely, from 49.9% of current fund revenues in Florida to only 11.9% in Vermont (Melton, 2001) Appropriations to public institutions have decreased in some states due to sluggish revenues from regional economies dependent on manufacturing or technology. However, a broader trend may be observed in which public colleges and universities compete for public funds with other programs, such as K-12 education and Medicaid (Cheslock & Gianneschi, 2008; Hebel, 2003; Weerts & Ronca, 2006).

The very format of external financial reporting bears witness to the tendency of public institutions to maximize revenue from sources other than state appropriations. The Governmental Accounting Standards Board (GASB) foresaw the tectonic change in public finance and crafted Statement 35, under which state appropriations are relegated to the status of nonoperating revenue. Although the GASB was criticized initially by the National Association of College and University Business Officers (Krogen & Goldstein, 1999), the results of operations since the implementation of Statement 35 demonstrate the prescience of the GASB. In a study of the top 20 public

institutions of higher education, as ranked by *U.S. News and World Report*, state appropriations showed a statistically significant decrease during the period 2002 to 2005, while tuition, grants and contracts, and other sources of revenue all increased at a statistically significant rate for the same time period (Adams, Guarino & Robichaux, 2006).

Moreover, concern over falling state appropriations has become so pervasive that a leading credit analyst has warned of consequences. Standard and Poor's emphasizes that if states adjust by reducing appropriations further, universities' credit ratings could be damaged (Lipka, 2005).

Public Institutions Mimic Private Institutions

Many public institutions are operating more like private institutions, and top public institutions now bear a strong resemblance to private institutions. Miami University of Ohio has implemented a system of tuition pricing and discounting, under which resident students pay the same gross tuition as nonresidents but receive a discount equal to the per student state appropriation (Breneman, 2003).

Reeling from a 31 percent reduction in state appropriations, the University of Virginia began in 2004 a seven-year $3 billion fund-raising campaign. In the same academic year the campaign was announced, the university derived 8.3 percent of its operating budget from endowment payout and gifts, but only 8.1 percent from state appropriations (Strout, 2004). In the following year the university became, along with the College of William and Mary and Virginia Polytechnic Institute, one of three chartered universities in the Commonwealth of Virginia. The chartered status is a formal legislative designation of increased autonomy in operations (Blake, 2006).

Dr. Elizabeth Hoffman, former president of the University of Colorado, sought for her institution "enterprise status," a recognition from the state of greater freedom in pursuing economic opportunity and in setting tuition rates (Basinger, 2004). It could be argued that such status would merely communicate an already existent reality. In the fiscal year ended June 30, 2005, the university generated 33.2 percent of its revenues from Federal grants and contracts and 22.3 percent of revenues from tuition, but only 8.2 percent from state appropriations (data from University of Colorado Statement of Revenues, Expenses, and Changes in Net Assets, Years Ended June 30, 2005 and 2004). The state of Colorado responded in 2005 by redirecting appropriations from institutions to resident undergraduate students in the form of vouchers (Jacobs, 2006).

Managerial Accounting Practices

Models of planning and control, long used in business organizations and more recently embraced by higher education institutions, are known as managerial accounting practices. These internal accounting practices include systems of budgeting, costing, pricing, and performance measurement, as well as initiatives in outsourcing and efforts to change organizational behavior through fiscal policy.

A budget represents a plan in economic terms. As such, budgets of colleges and universities not only document anticipated revenues and costs, but express institutional

priorities (Chabotar, 1999). Institutions of higher education are engaged in planning for programs (DeHayes & Lovrinic, 1994), for varying levels of resources and operations (Dellow & Losinger, 2004; Reed, 1992), for cash requirements, and for long-term asset acquisitions (Caruthers & Layzell, 1999).

Costing is the accumulation and analysis of cost information for an organization and its constituent parts. Vital to the analysis of costs, particularly in higher education institutions, is the distinction between *direct* and *indirect* costs. Direct costs are costs specifically traceable to a segment of the organization or to an activity within the organization. Examples of direct costs in colleges and universities include the salaries of faculty within a department or charges for the time of the principal investigator on a research project.

Indirect costs, such as the costs of most physical facilities and a large portion of the institutional administrative costs, are not traceable to segments or programs within the institution. More institutions, however, are recognizing the need to assign indirect costs to academic and administrative units, in order to arrive at a full cost of operations for the unit (Dempsey, 1997; Strupeck, Milani, & Murphy, 1993). A few institutions have embraced the activity-based costing (ABC) model, an approach to assigning overhead cost by identification of cost-driving activities. The further application of ABC also has been suggested by scholars (Miller, 1999; Roy & Goodall, 2005; Trussel & Bitner, 1996). In sum, costing remains at a developmental stage for most higher education institutions.

Pricing practices in colleges and universities vary by the extent to which an institution can subsidize price through reserves of institutional wealth or appropriations from a state (Winston, 1997). Many institutions, particularly private colleges and universities, have raised tuition and buffered the effect on affordability by offering discounts in the form of institutional aid (Lapovsky & Hubbell, 2003). While few colleges and universities have lowered tuition, more institutions at least have considered the nexus between price and the consumption of resources. This calculus is manifest in the differentiation of tuition by academic program.

The movement toward measurement of performance in colleges and universities has proceeded under the aegis of *responsibility center management* (RCM). RCM is predicated on a devolution of budgetary authority from the central administration to individual academic and administrative units. These units are called responsibility centers. With greater fiscal autonomy and flexibility, each center bears more responsibility for cost control and self-sufficiency. A central tenet of RCM is that organizational behavior is based on fiscal policy and is amenable to change.

Indiana University Purdue University Indianapolis (IUPUI) was the first public university in the United States to implement RCM, beginning the process in the 1989-90 academic year (Stocum & Rooney, 1997). Private institutions which have implemented RCM include the University of Pennsylvania and the University of Southern California (Wilms, Teruya, & Walpole, 1997), as well as Northwestern University in the operation of its medical school (Haberaecker, 2004). Public institutions other than IUPUI which since have adopted RCM include the University of Michigan and the University of California at Los Angeles (UCLA) (Wilms et al., 1997), the University of New Hampshire (Leitzel, Corvey, & Hiley, 2004), and the

University of Minnesota (Hearn, Lewis, Kallsen, Holdsworth, & Jones, 2006).

The changes in information systems described above fit closely with efforts to modify organizational behavior and thus to control costs. But the reward for parsimony in an academic unit often has been a reduced appropriation in the budget for the next fiscal year. The right which schools and some departments at IUPUI enjoy, to carry forward a portion of funds to the following fiscal year, epitomizes efforts to break the cycle of spendthrift behavior. The program-costing model initiated by Rochester Institute of Technology also has changed organizational behavior. Departments in the institution coveted large amounts of space until the new costing system charged the indirect cost of facilities on the basis of space occupied (Dempsey, 1997).

The decision to contract with an external provider for the performance of an organizational function, on the premise that the outside entity can complete the task at a cost lower than that achievable by the organization, has a long history. While manufacturing businesses likely were the first to employ this calculus of lower cost, service organizations, now dominant in the economy, also have embraced this approach. In the last 20 years, *outsourcing* has become the term of choice for the decision, but more has changed than mere terminology. Today organizations are outsourcing not only to achieve cost savings, but also to focus on core competencies (Switser, 1997).

Outsourcing is common in institutions of higher education, but its adoption by colleges and universities has been documented far less than its acceptance in business organizations. Dining operations and bookstore operations were generally the first functions outsourced by higher education institutions (Nicklin, 1997). Colleges and universities tended to outsource dining and bookstore operations because the institutions lacked the special expertise necessary to perform these functions (Abramson, 1994).

Along with its manifest benefits, outsourcing presents challenges to colleges and universities. The contracting of services requires institutions to part with some control of a process (Blumenstyk, 1998; Kennedy, 2002; Van der Werf, 1999). Outsourcing places the onus on institutions to plan for future as well as current costs (Mercer, 1995). But the greatest challenge confronting colleges and universities that outsource activities is the impact on employee jobs and the concomitant effect on institutional collegiality (Bartem & Manning, 2001). In the communitarian environment of the campus the privileges accorded faculty often are extended to support staff, whose positions are most likely threatened by outsourcing.

Perhaps the best known use of outsourcing took place at the University of Pennsylvania. John A. Fry, executive vice president of the university, led an aggressive cost reduction campaign that included the outsourcing of bookstore operations and dining operations (Van der Werf, 1999). In fact, Penn was the first Ivy League institution to contract food service (King, 1998). The most ambitious and most controversial outsourcing, however, was the contract for facilities management with Trammell Crow (Nicklin, 1997; Van der Werf, 2000). The contract faced bitter opposition from union workers, who remained Penn employees even as Trammell Crow supervised them. Ultimately, Penn and Trammell Crow rescinded the agreement, when the company found it lost money managing Penn's crumbling facilities (Van der Werf, 2000).

Method

Information collected for analysis in this study was obtained with a survey instrument developed by the principal author. The first section of the instrument uses a Likert type scale ranging from 7 points to 1 point and includes questions concerning six domains of managerial accounting practices: budgeting, costing, pricing, performance measurement, organization behavior practices, and outsourcing. These questions require respondents to choose the extent to which specific managerial accounting practices are observed at their institutions. The second section of the instrument includes an open-ended question as to the three most important issues in the finance of higher education for the next five years. The instrument is appended to this paper.

The investigators surveyed a random sample of chief financial officers (CFOs) in four-year colleges and universities at two points in time, 1998-99 and 2003-04. Two mailings in 1998-99 generated a total response of 310 CFOs, representing 146 public institutions and 164 private institutions across all 50 states. In 2003-04 one mailing yielded a response from 156 CFOs, distributed between 79 public institutions and 77 private institutions, distributed among 41 states.

Of interest to the investigators were differences in the perceived rate of adoption of managerial accounting practices between CFOs representing public institutions and CFOs representing private institutions, at the two points in time. A 2 X 2 between-subjects multivariate analysis of variance (MANOVA) was performed on six dependent variables: budgeting, costing, pricing, performance measurement, organization behavior, and outsourcing. Independent variables were institutional control (private or public) and time (1998-99 and 2003-04).

Results

The results of the MANOVA indicated a significant interaction effect for institutional control and time, $F(6, 442) = 4.98$, $p < .001$, partial eta squared = .063. In univariate follow-up tests, significant interactions were observed in the domains of budgeting, pricing, performance measurement, and outsourcing.

To assess the simple main effects between control (public or private) at each time period (1998-99 and 2003-04), a series of independent sample t-tests was conducted. For the time period 1998-99, CFOs representing private institutions reported adoption of managerial accounting practices at a rate significantly higher than CFOs representing public institutions in the domains of pricing and performance measurement. The means and standard deviations on the six domains of managerial accounting practices for public and private institutions of higher education in 1998-99 appear in Table 1 below.

For the time period 2003-04, CFOs representing public institutions reported adoption of managerial accounting practices at a rate significantly higher than CFOs representing private institutions in the domains of budgeting, performance measurement, organization behavior, and outsourcing. The means and standard deviations on the six domains of managerial accounting practices for public and private institutions of higher education in 2003-04 appear in Table 2 below.

There was also a significant main effect for time, $F(6, 442) = 4.97$, $p < .001$, partial eta squared = .063. Univariate follow-up tests indicated a significant difference in

Table 1
Means and Standard Deviations on Managerial Accounting Practices, 1998-99

	Public		Private	
Domain	*M*	*SD*	*M*	*SD*
Budgeting	3.93	1.11	4.11	1.25
Costing	2.46	1.59	2.65	1.46
Pricing	3.29	1.98	4.72	1.79
Performance Measurement	3.17	1.19	3.52	1.43
Organization Behavior	4.34	1.36	4.44	1.32
Outsourcing	4.68	1.29	4.72	1.25

Note: N = 146 public institutions, 164 private institutions, 310 total institutions.

Table 2
Means and Standard Deviations on Managerial Accounting Practices, 2003-04

	Public		Private	
Domain	*M*	*SD*	*M*	*SD*
Budgeting	4.22	1.15	3.82	1.07
Costing	2.66	1.45	2.37	1.43
Pricing	4.32	.90	4.51	.91
Performance Measurement	3.33	1.21	2.65	1.14
Organization Behavior	4.23	1.24	3.77	1.40
Outsourcing	4.90	1.19	4.37	1.38

Note: *N* = 79 public institutions, 77 private institutions, 156 total institutions.

adoption of organization behavior practices, with a higher adoption reported in the earlier time period, 1998-99.

For the time period 2003-04, the investigators explored which items among the domains of budgeting, performance measurement, organization behavior, and outsourcing, demonstrated a substantial difference between public and private institutions. Consistent with the results noted above, CFOs representing public institutions reported adoption of managerial accounting practices at a rate significantly higher than CFOs representing private institutions in these domains. The largest differences between public and private institutions in the adoption of budgeting

practices were found in program budgeting (Item 1) and capital budgeting (Items 5 (a), (b), and (c)). In respect to performance measurement, the largest differences were observed for breakeven analysis at the class level (Item 13(a)), profitability at the class level (Item 14(a)), benchmarking (Item 15), and satisfaction with performance measurement (Item 16). The largest difference between public and private institutions in organization behavior was noted in rewarding cost savings (Item 18). Of two questions on outsourcing, cost analysis (Item 20) showed the larger difference between public and private institutions. The item analysis on these four domains of managerial accounting practices for public and private institutions of higher education in 2003-04 appear in Table 3 below.

Finally, the results of the open-ended question addressing the three most important issues in the finance of higher education revealed that declining public support (i.e., falling state appropriations) was cited by 37 percent of CFOs in 2003-04. This represented the second most frequent response to this item, up from 12 percent and ninth place in 1998-99.

Conclusions and Implications

The above results suggest that public institutions have assumed a greater commitment to managerial accounting practices as part of an adjustment to the new economic realities they face. Reduced state appropriations have forced public institutions to raise tuition substantially, while rising costs, notably in health care benefits, likely have led public colleges and universities to seek more frugal approaches to management.

Market forces and changing fiscal priorities for the states suggest that the hierarchy of public colleges and universities might become even more pronounced, with flagship and land grant institutions separating themselves further from regional institutions. Finally, the changing construct of institutional control invites revision in the conduct of institutional research. Regional institutions which receive a substantial percentage of total revenues from their states are unlikely to be managed in the same fashion as top public institutions, which often derive less than 10 percent of total revenues from state appropriations. Institutional researchers might consider reconceptualizing public institutions of higher education as a continuous variable, based on percentage of state support, rather than, as heretofore, a variable dichotomous with private institutions.

Table 3
Means and Standard Deviations on Managerial Accounting Practices, 2003-04

		Public		Private	
Item		*M*	*SD*	*M*	*SD*
1	Program budgeting	5.45	1.45	5.02	1.71
2	Flexible budgeting	4.80	1.44	4.79	1.58
3	Interim budgeting	4.61	2.03	4.80	2.16
4	Cash budgeting	3.95	2.23	3.64	2.24

Table 3 (continued)
Means and Standard Deviations on Managerial Accounting Practices, 2003-04

Item	Public		Private	
	M	*SD*	*M*	*SD*
5 Capital budgeting				
(a) Net present value	3.28	2.02	2.64	1.89
(b) Internal rate of return	3.06	1.91	2.38	1.74
(c) Payback	4.48	2.11	3.82	1.98
6 Satisfaction with budgeting practices	5.15	1.10	4.76	1.17
13 Break-even analysis by				
(a) classes	4.01	1.74	3.18	1.78
(b) departments	3.28	1.54	3.03	1.64
(c) colleges	3.29	1.80	2.72	2.23
14 Profitability analysis by				
(a) classes	3.00	1.58	2.00	1.39
(b) departments	3.44	1.72	3.27	1.97
(c) colleges	3.56	1.99	3.42	2.49
15 Benchmarking	3.44	1.78	2.73	1.77
16 Satisfaction with performance measurement	3.87	1.43	3.27	1.71
17 Faculty participation	4.82	1.52	5.05	1.89
18 Rewarding cost savings	3.63	1.78	2.53	1.85
19 Satisfaction with organization behavior practices	4.14	1.34	3.83	1.54
20 Cost analysis for outsourcing	4.90	1.19	4.37	1.38
21 Satisfaction with outsourcing practices	5.14	1.13	4.77	1.41

Note. $N = 79$ public institutions, 77 private institutions, 156 total institutions. The full text of each item is available in the instrument appended to this paper.

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Appendix

NATIONAL SURVEY ON MANAGERIAL ACCOUNTING PRACTICES IN HIGHER EDUCATION ADMINISTRATION

The purpose of this research study is to learn about the status of managerial accounting practices in higher education administration.

Your assistance in this research study is sincerely appreciated. Thank you for your time and interest, and please check the question at the end of the questionnaire if you wish a summary of the study. The enclosed, stamped envelope is for your convenience.

SECTION I

With what frequency do you, as the Chief Financial Officer, think that the following managerial accounting practices are being observed in your institution? For each practice, indicate your opinion on its frequency at your institution by selecting a number on the scale that ranges from Always (7) to Never (1).

Please know that your answers will be completely confidential. Thank you for your time and assistance.

Always	Very Often	Often	Sometimes	Rarely	Very Rarely	Never
7	6	5	4	3	2	1

BUDGETING

_____ 1. Budgeting for operations is not limited to object expenses (e.g., salaries, supplies), but includes an analysis of institutional program expenses in instruction, research, and service.

_____ 2. In budgeting for operations, planned amounts of expenditures change for different levels of enrollment (flexible budgeting practice).

_____ 3. The annual operating budget is revised or adjusted during the fiscal year, such as at mid-year.

_____ 4. The institution prepares monthly budgets for its cash accounts.

5. For proposed capital projects, the institution computes the project's

_____ (a) net present value

_____ (b) internal rate of return

_____ (c) payback period

_____ 6. I am satisfied with the budgeting practices at my institution.

COSTING

7. Indirect costs, including plant depreciation and maintenance, are routinely allocated to these responsibility centers within the institution.

_____ (a) colleges (if applicable)

_____ (b) departments

_____ 8. The institution has tested activity-based costing in one or more pilot projects.

_____ 9. I am satisfied with the costing practices at my institution.

PRICING

10. The institution establishes tuition rates

_____ (a) based on market demand

_____ (b) based on cost

_____ (c) differentiated by academic program (differential pricing)

11. The institution grants financial aid

_____ (a) based on need

_____ (b) based on merit

_____ (c) as an inducement for the student to matriculate, independent of need or merit

_____12. I am satisfied with the pricing practices at my institution.

PERFORMANCE MEASUREMENT

13. The break-even enrollment is analyzed in planning for the operations of

_____ (a) classes

_____ (b) departments

_____ (c) colleges (if applicable)

14. The excess or deficiency of revenues relative to expenses (change in net assets) is analyzed in the control of operations of

_____ (a) classes

_____ (b) departments

_____ (c) colleges (if applicable)

_____ 15. The institution has established benchmark costs for the evaluation of performance.

_____ 16. I am satisfied with the performance measurement practices at my institution.

ORGANIZATION BEHAVIOR

_____ 17. The institution seeks the participation of faculty in the process of preparing the institutional budget.

_____ 18. The institution has a formal mechanism for rewarding cost savings and the excess of revenues over expenses (increases in net assets) in responsibility centers.

_____ 19. I am satisfied with the organization behavior initiatives at my institution.

OUTSOURCING

_____ 20. The institution has undertaken comparative analysis of the costs of providing services internally and contracting for services from an outside supplier.

_____ 21. I am satisfied with the outsourcing practices at my institution.

EFFECT OF NEW REPORTING MODEL

_____ 22. The managerial accounting system of my institution functions better under

the new reporting model (Statement of Financial Accounting Standards No. 117 or Governmental Accounting Standards Board Statement No. 35, as applicable).

SECTION II

23. Please check the areas in which your institution has engaged in outsourcing.

_____ bookstore operations
_____ computing services
_____ custodial services
_____ dining operations
_____ grounds maintenance
_____ security services
_____ vending operations
_____other (please specify)_____

24. What do you believe will be the three most important issues in the finance of higher education for the next five years? Why? _____
_____

SECTION III

About Yourself

A. Your age: ____ under 35 ____ 35-50 ____ above 50

B. Time in current position _____

C. Gender: ____ Male ____Female

D. Race: ____ African American ____ Asian American ____ Caucasian American
____ Latino/a American ____ Native American ____ Pacific Islander
____ Other

E. Highest degree earned _____

F. Professional certification:
____ CPA ____CMA ___Other (please specify) _____

G. Annual salary: ____ under $50,000
____ $50,000 - $65,000
____ $65,000 - $80,000
____ $80,000 - $95,000
____ $95,000 - $110,000
____ $110,000 - $125,000
____ above $125,000

H. Prior Participation
I participated in this study in 1998. Yes ____ No _____

About Your Institution

A. Control: ____ Public ____ Private

B. Carnegie classification:
____ Doctoral/Research - Extensive ____ Master's (Comprehensive)
____ Doctoral/Research – Intensive ____ Baccalaureate – Liberal arts/General

C. Enrollment of Full Time Equivalent students _____

D. Has your institution experienced two or more deficits in its overall operating budget in the last five years? ____ Yes ____ No

Again, thank you very much for your time and interest.
Olin L. Adams III, Ph.D., C.P.A.
Assistant Professor of Education Leadership, Auburn University

____ Please check here if you wish a summary of this study.