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EQUITY EFFECTS OF ENTREPRENEURIAL COMMUNITY COLLEGE REVENUES

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This study conceptualizes entrepreneurial forms of community college revenues as undermining finance equity and examines their distribution through a single-state case study. The hypothesis that colleges serving wealthier communities will be more successful in obtaining revenues from performance funding and private fundraising is tested. Based on a Spearman's correlation analysis of college rankings of community wealth and revenues received from governmental and private sources, the findings show that wealthier colleges in Massachusetts are not more or less successful in garnering funds from performance incentive programs or fundraising. The potential effect of these forms of revenues on finance equity is considered. The study provides a model for replication in other states.

Community colleges are the gateway to higher education for large numbers of students, including many who have low socioeconomic status in the United States (Boswell & Wilson, 2004). The period of tremendous community college growth in the 1960s–70s contributed

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to an increase in participation by students who had traditionally been underrepresented in higher education (Breneman & Nelson, 1981). Community colleges were built and financed to increase access. Colleges were located geographically to enable attendance by day-time commuters; financial resources were distributed by funding formulas based on the number of students enrolled; and tuition charges were low or non-existent. For these reasons, the community college system is often understood as an important site for progressive movement towards social and economic equality (Labaree, 1997).

The 1980s brought a new era in which public institutions were not only expected to serve the public good but to do so in an efficient manner. Drawing on private sector management concepts, legislators and policy makers sought to finance community colleges in ways that promoted administrative efficiencies, market-oriented entrepreneurship, and academic productivity. State appropriations formulas have been modified to promote quality, productivity, and accountability of community colleges. The new financing approaches are termed “incentive” or “performance funding,” and their use has increased over the past two decades, supplementing or supplanting enrollment-driven models (Burke & Associates, 2002; Burke & Serban, 1998; McKeown-Moak, 2000a; *State Funding*, 2000). Though the actual amount of performance accountability funds have been minimal, accountability rhetoric has received considerable legislative and media attention. Even small amounts may affect college operations (Dougherty, 2002).

The rhetoric of public college funding shifted in the 1980s and 90s from a focus on equity to one on efficiency. With this shift, state appropriations eroded and colleges received greater shares of their revenues from competitive state and federal grants and from market-based sales and services (Merisotis & Wolanin, 2000). The majority of community colleges now conduct private fundraising through affiliated non-profit foundations, which are separate corporations with their own governing bodies, operating budgets, and staff. The establishment of community college foundations peaked in the 1980s and 1990s, when nearly 60% of foundations were created (Keener, Carrier, & Meaders, 2002), coinciding with the eroding base of public appropriations.

The significant rhetorical shift in public finance and the growing role of “entrepreneurial revenues”—those garnered through institutional success in competitively awarded governmental programs or in private markets—warrants an investigation of the equity of community college finance today. In this study, we evaluate the equity of the distribution of two prominent entrepreneurial sources

of revenue—performance funding and private fundraising—through a case study of community college financing in Massachusetts. The study examines the hypothesis that, under a finance system that is increasingly efficiency- rather than equity-oriented, colleges serving students of color and students with high financial need will be at a disadvantage in securing revenues relative to peer institutions serving wealthier communities.

METHODS

Conceptual Framework

The conceptualization of equitable funding is based on the scholarship of school finance (Odden & Picus, 2000), community college finance (Breneman & Nelson, 1981; Garms, 1981), and higher education finance (DesJardins, 2002). Financing strategies that award greater shares of public funds to colleges serving students with greater financial and educational needs are defined as promoting “vertical equity.” Strategies that provide equal shares to those with equal needs are defined as promoting “horizontal equity.” Public finance policies that place a greater burden on those with greater ability to pay are considered “progressive,” while those that do the opposite are defined as “regressive.”

The study also draws on the critical/political framework of Volk, Slaughter, and Thomas (2001), who argued that institutional demographic characteristics, such as the race or gender of the student body, are “reflective of economic and power divisions in the wider society” (p. 393). Political power is represented in the study by enrolled student racial characteristics and community wealth. Colleges with larger proportions of enrolled students of color and students receiving financial aid are assumed to be at a political and market disadvantage in securing entrepreneurial revenues.

Finance equity is enacted through the negotiations of administrative and political leaders. This was evidenced by recent events in California where leaders of low-funded community colleges collaborated to convince the governor and legislature to adopt a new state funding formula that brought millions of additional dollars to their campuses (Quittner, 2004a, 2004b). Analyses of funding disparities contributed significantly to the political debate and subsequently adopted equalization plan.

Colleges in less affluent areas may have more difficulty attracting and retaining skilled administrators, which would hamper them in competing for performance funding. As Levin points out in reference

to secondary schooling, poorer students are more likely to attend schools with an inadequate administrative infrastructure (1994). Finally, when performance criteria are insensitive to differences in enrolled student characteristics, colleges serving under-prepared students will be at a disadvantage.

Colleges serving higher proportions of students of color are also expected to be at a disadvantage in fundraising due to historic economic discrimination against people of color in the United States. Foundations raise funds for their colleges using standard nonprofit resource development methods. These methods include annual direct mail appeals, events, grant requests to corporate giving programs and other foundations, major gift and planned giving programs, and special campaigns for capital projects or endowments. Keener et al. (2002) found that large suburban colleges have the largest fundraising staffs. Such fundraising capacity affects philanthropic prospects, as does the number of alumni and their relative wealth. Therefore, colleges have unequal donor prospects and unequal resources with which to pursue donations.

Data Collection

The hypothesis that entrepreneurial revenue sources are regressive was tested through a single-state case study. Massachusetts was selected due to data availability and the authors' familiarity with community colleges in the state. A total of 14 public community colleges in Massachusetts were included in the sample. (The Integrated Postsecondary Education Data System [IPEDS] data file includes a total of 16 colleges in Massachusetts coded as public two-year colleges. Quincy College is excluded from the sample because it receives zero state appropriations. Springfield Technical Community College was excluded as a technical college.) The analysis is presented as a model for replication in other states for the purpose of informing state-level finance policy and institutional practice.

Recent community college finance data from three sources and community wealth statistics from the U.S. Census were analyzed. The finance data came from the National Center for Education Statistics' (NCES) Integrated Postsecondary Education Data System (IPEDS), the Commonwealth of Massachusetts, and Guidestar[®], which is a national online data base that reports financial data for nonprofit organizations recognized by the Internal Revenue Service (IRS). (The Guidestar Web site at www.guidestar.com is produced by Philanthropic Research, Inc., a 501(c)(3) public charity founded in 1994. For fiscal year 2001, Guidestar gathered and distributed data

on more than 850,000 charitable organizations to assist them in meeting federal financial reporting requirements.)

The IPEDS data provide information on the proportion of college revenues from different sources and provide national data for comparison of the Massachusetts case. Institutional enrollment characteristics were also obtained through IPEDS. Data from the Massachusetts public college finance files show the distribution of performance funding, and the Guidestar[®] data indicate college revenues and assets from fundraising. The variables derived from the various data sources, their definitions, and descriptive statistics are reported in Table 1 and described below.

Analysis

First, variation among the colleges in their receipt of revenues from performance funding and fundraising and from other governmental and private entrepreneurial sources is characterized by descriptive statistics. The other revenue sources are reported in IPEDS and include state appropriations, federal and state grants and contracts, and three market revenue sources: auxiliary enterprises, educational sales and services, and the category of “other,” which includes interest income from investments and miscellaneous rentals and sales. Massachusetts does not have local funding for community colleges, so this revenue source is not evaluated.

The analytic strategy involved ranking Massachusetts community colleges on the amount of revenues received from various sources and correlating these ranks with the colleges’ ranks for community wealth. Federal student financial aid was used as a benchmark for progressive funding. The federal government has the strongest role in redistributing resources to financially needy students (Wong, 1994), and federal financial aid and grants programs are explicitly means tested (Kane, 1999; McPherson & Schapiro, 1998). Therefore, the correlation between federal funding and community wealth was designated as a benchmark for progressive funding. The magnitude and direction of the correlations between performance and philanthropic funding and community wealth were then compared to these benchmarks to characterize their equity effects.

The relationship among the various forms of revenue and college enrollment characteristics is observed using Spearman’s rho, a non-parametric correlation statistic appropriate for ranked data with few ties (Ritchey, 2000). The use of a nonparametric statistic was required due to the fact that with such a small sample size many of the variables were not normally distributed. Values of Spearman’s

Table 1. Variable definitions and descriptive statistics

Variable [variable name in Table 2]	Type of variable	Values mean (SD) range	Data source and transformations
Community wealth, derived from county median income & child poverty [Wealth]	Ranking Dollars	1(low)-14(high) 44427 (7293) 37164-59515	U.S. census income year 1999
Students of color [Color%]	% children age 5-17 in poverty	16.75 (7.02) 6.70-30.30	IPEDS
Students receiving federal financial aid [FedFinAid]	% of total enrollment	19.71 (16.19) 5-61	IPEDS
Students receiving state financial aid [StatFinAid]	% of full-time first-time degree-seeking students	30.43 (14.74) 11-74	IPEDS
State appropriations per FTE [StateApps]	% of full-time first-time degree-seeking students Dollars	38.36 (14.98) 11-80 5694 (976) 4575-7503	IPEDS IPEDS
Federal grants/contracts per student [FedGrant]	Dollars	547 (292) 305-1345	IPEDS
State grants/contracts per student [StGrant]	Dollars	320 (123) 146-580	IPEDS
Sales educational services [SalesSvcs]	\$1000s	94.35 (151.3) 0-463.6	IPEDS
Auxiliary enterprises per student [Auxilry]	Dollars	112 (121) 00-307	IPEDS
Other revenues [Other]	\$1000s	841.1 (624.9) 196.8-2171.7	IPEDS
Campus performance improvement program [PerfFund]	Sum of competitive grant awards 1998-2000 in \$1000s	482 (197) 185-770	MA Board of Higher Education
Foundation revenues per student [FdnAsset]	IRS Form 1099 FY2001 reported revenues/ unduplicated enrollment	108 (82) 18.54-263	Guidestar [®]
Foundation assets [FdnAsset]	IRS Form 1099 FY2001 reported assets in \$1000s	2886 (1285) 1045-5188	Guidestar [®]

Sources: IPEDS 2000-01, U.S. Census 1999, MA Board of Higher Education 1998-2000, Guidestar[®] 2001.Sample: Massachusetts public two-year colleges (one technical college excluded) ($N = 14$).

rho greater than $r = .40$ are reported and the statistical significance tested at $\alpha = .05$. In this context where the data represent the full population of nontechnical community colleges in the state, significance represents whether the observed test effects have a magnitude associated with a low probability of occurrence by chance if sampling were conducted in this same population in multiple years. The magnitude of the relationship is reported as r -squared, Proportionate Reduction in Error (PRE), which represents the proportion of variance of the dependent variable explained by the independent variable. The analysis was conducted in SPSS version 11.0.

PER CAPITA ENROLLMENT

Many forms of funding, such as state appropriations and auxiliary revenues, are driven by enrollment, and it is necessary to rank receipt of those forms of revenue on a “per capita” basis. However, other forms of revenue, such as state performance funding and federal grants and contracts, which are targeted to fund special populations in programs such as TRIO and GEAR UP, have weak relationships with overall enrollment. Success in obtaining grant funds is likely to be determined more by administrative capacity for grant writing than by institutional size. As in other higher education finance studies (Jones, 2000; McKeown-Moak, 2000b), determining the appropriate campus per capita unit of measurement for comparison is not straightforward.

To determine the strength of the relationship, scatterplots and Pearson’s correlations were observed for revenues from each source and credit-bearing enrollment—measured both as 12-month unduplicated head count and as full-time equivalent students (FTE)—using the NCES’ definition of three part-time students equated to one FTE. Based on this analysis, college receipt of state appropriations was ranked per FTE, while federal and state grants and contracts, auxiliary enterprises, and foundation revenues were ranked per student. Performance funding, foundation assets, and sales in the educational services and “other” categories, which are typically delivered off campus and are not dependent on for-credit enrollment, were ranked based on absolute value, not per capita.

STUDENT ENROLLMENT CHARACTERISTICS

In addition to the measures of institutional size discussed above, the following measures of student enrollment characteristics at each

college were obtained from the IPEDS 2000–2001 Finance and Institutional Characteristics Surveys. The percentage of full-time students receiving federal and state financial aid serves as a proxy for the financial need of students in the college’s service area. These measures include only full-time students enrolled for credit. They are limited by the exclusion of students enrolled part-time or in noncredit classes, whose financial need is likely to be greater. Similarly, the percentage of enrolled students of color, defined by the combined numbers of Black, Hispanic, Asian, and Native American students, serves as a proxy for the demographic characteristics of the service area. The enrolled student body is assumed to represent the racial characteristics of the communities served by the college.

COMMUNITY WEALTH

U.S. Census estimates of income and poverty measuring “median household income” and “percent of related children age five to seventeen in families in poverty” were obtained as measures of community wealth for the income year 1999, which was the most recent county level data available. (The Small Area Income and Poverty Estimates, 1999 State and County FTP Files, and Description Files were obtained from <http://www.census.gov/hhes/www/saie/stcty/sc99ftpdoc.html>) The wealth values were assigned to each of the 14 public Massachusetts community colleges in the sample according to the county in which the college is located. Values for four counties each containing two colleges were assigned to two colleges each. For these colleges, the higher wealth ranking was assigned to the college enrolling fewer students who received federal financial grant aid.

PERFORMANCE FUNDING

In fiscal years 1998–2000, the Massachusetts Board of Higher Education (BHE) funded grants that were competitively awarded under the Campus Performance Improvement Program (PIP). The grants were funded by annual appropriations by the state legislature in response to budget requests from the BHE chancellor. The ranking of the sum of awards to each campus over the three-year period is analyzed as an indicator of the college’s success in competing for state funds that were designed to spur institutional efficiency. The three-year sum is used to smooth anomalies of distribution in any one year.

PRIVATE FUNDRAISING

Each of the Massachusetts public community colleges has a private nonprofit foundation charged with fundraising. The fiscal year 2001 revenues and assets held by the foundations for the colleges, as reported to the IRS, were obtained through Guidestar[®] for fiscal year 2001. These values are analyzed as measures of institutional resources obtained through private fundraising. Foundation revenues are compared among colleges on a per student basis, while assets are compared in absolute value. This was done because the assets held by the college are more likely to be determined by administrative factors than by enrollment size. In 2000, colleges were required to report in the IPEDS Finance Survey any revenues from “affiliated entities,” such as foundations, but they were not required to report revenues received, retained, and invested by such entities for future support of the college. (These revenues will be required by IPEDS for fiscal year 2004.) Colleges are required to report endowments held by the college to IPEDS, but in Massachusetts in 2001, only one community college reported a nonzero value for their endowment. Therefore, this variable was not included in the analysis.

RESULTS

Revenue Sources

The IPEDS 2000 Finance data indicate that the 14 Massachusetts community colleges included in this study received, on average, 67% of their nontuition revenues from state appropriations, with a range of 60% to 77%. Federal grants and contracts were the second largest source of funds, contributing 15% on average, in a range of 10% to 23%. State grants and contracts averaged 9% and range from 5% to 13%. The state performance funding awards, which are reported annually in this category of state grants, were a small proportion of total revenues. Even taking a three-year sum, as measured here, the awards averaged only 2% of total annual revenues in 2000.

Auxiliary revenues and revenues in the “other” category accounted for just 3% on average, but had a large range—from close to zero for some colleges up to 9% and 7%, respectively. All other sources of revenues averaged less than 1%, including private gifts, sales of educational services, and independent operations. The foundation revenues reported in Guidestar[®] averaged 2% of total revenues (range = .001–.06). Assets held as a proportion of total revenues in 2000 averaged 10% (range = .03–.21).

Tuition and fees averaged 23% (range = 15% to 33%) of total revenues. The range of tuition and fees charged was \$663. The range of the proportion of students receiving federal and state financial aid (11–74% and 11–80%, respectively) indicate significant variation in the capacity of the student body at each campus to pay tuition and fee charges. This is consistent with the wide variation in the community wealth statistics reported in Table 1 that show the percentage of children in poverty in Massachusetts counties ranging from 7% to 30%.

Compared to many larger institutions across the country, the community colleges in the commonwealth are relatively small in size, ranging from approximately 3,000 to 10,600 students, with an FTE range of 1,400 to 4,500. Seven colleges are located in urban or urban fringe locations, five in midsize cities, and two in small-town and rural areas.

Correlation Analysis

Table 2 presents Spearman's coefficients for the correlation of the rank of each college's receipt of revenues from governmental and private sources, community wealth, and percentage of enrolled students of color. Values greater or equal to $r = .40$, a cut point indicating a moderate relationship, are reported. The significant negative correlations of federal student financial aid and federal grants and

Table 2. Spearman's correlation: Massachusetts revenue sources and community wealth

Variable	FedFinAid	FedGrant	StateApps	StatGrant	StFinAid
FedFinAid%	1.00	.511			.890*
FedGrant	.511	1.00	.499		.631*
Wealth	-.709**	-.538*	-.424		-.605
Color%	.479	.489			

Variable	Auxilry	SalSvcs	Other	PerfFund	FdnRev	FdnAsset
FedFinAid%					-.456	-.477
FedGrant			-.459			
Wealth		-.448	.508			
Color%	-.548*					

Sources: IPEDS 2000–01, U.S. Census 1999, Massachusetts Board of Higher Education 1998–2000, Guidestar[®] 2001.

Sample: Massachusetts public two-year colleges (one technical college excluded) ($N = 14$).

Note: Correlations $< .40$ not reported.

contracts with community wealth indicate that these resources, which are utilized here as benchmarks for progressive public financing, were directed toward low wealth communities. However, the strength of this association is not as strong for federal grants (PRE = 50% and 29%, respectively). Comparing the correlations of other forms of revenue with community wealth and federal funding indicates that state-provided financial aid was also distributed in a progressive manner. The correlation with community wealth is negative and significant (PRE = 37%). State financial aid also has a high positive correlation with federal financial aid (PRE = 79%) and a moderate positive correlation with federal grants and contracts (PRE = 40%).

In contrast, no other revenue sources, including philanthropic and performance incentive funds, have significant correlations with community wealth or federal funding. Foundation revenues and assets are negatively correlated with federal financial aid, but the magnitude of the effect is small and not statistically significant. Revenues from auxiliary enterprises are negatively correlated with the proportion of students of color (PRE = 30%), the only significant correlation of revenue sources with this measure of community racial characteristics and political power.

DISCUSSION AND IMPLICATIONS

Philanthropic giving and state performance incentive funding have become increasingly common as revenue sources for community colleges in the past two decades. From a critical perspective, this study tested the hypothesis that colleges serving wealthier communities have an advantage over colleges in less affluent areas in securing these types of funds. Through a case study of Massachusetts community college finance, no evidence was found to support that hypothesis. The association between wealth and private fundraising was negative in this study, but not statistically significant. The distribution of performance incentive funds was not associated with community wealth. Colleges serving greater proportions of students of color had a low ranking in their ability to raise auxiliary revenues, perhaps reflecting lower levels of discretionary spending by their students, but were not at a disadvantage in securing any other form of funding.

Student financial aid was the only state revenue form in our study with a vertically equitable distribution. State appropriations, state grants, and performance incentive funding were distributed in a manner suggesting horizontal equity. The distribution of these funds is not associated with community wealth.

Census community wealth data and the wide range among the Massachusetts community colleges of students receiving federal financial aid indicate considerable variation in financial need in Massachusetts communities and among students attending community colleges. The vertical equity goal of providing additional resources to students with higher need is addressed by federal and state student financial aid and by federal grants. Other forms of funding are not designed to—and do not—promote vertical equity. On the other hand, they do not appear to favor colleges serving wealthier communities. Therefore, it is possible that emphasis on private giving to community colleges may support vertical equity goals by raising the total revenues available from governmental and private sources. Private revenues may offset state spending in wealthier communities, enabling state funds to be allocated to colleges enrolling students with greater financial need through the financial aid system. In this manner, it is possible for philanthropic revenues to support progressive funding at the state level. Further study is needed to determine whether such a progressive trade-off between public and private funding takes place.

The study provides a model for replication in other states. Massachusetts has a low level of variation in its revenue distribution relative to other states (Dowd & Grant, 2004) and has a reputation for progressive politics. Results in other states may well differ according to the particular context of state politics and public higher education finance. Beginning with the IPEDS financial reporting for fiscal year 2004, colleges will be required to report funds held by their affiliated foundations (Statham, 2004). This requirement will eliminate the need to obtain philanthropic revenue data from GuideStar. This change in reporting requirements, itself, signals the growing importance of fundraising dollars in public higher education finance. With increased emphasis on philanthropy, disparities in the capacity of different colleges to attract private giving may grow. Therefore, replication of this study over time is also warranted to maintain a focus on public finance equity in an era of increased emphasis on institutional efficiency and accountability.

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