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A PATH TO SUSTAINABILITY: HOW REVENUE DIVERSIFICATION HELPS COLLEGES AND UNIVERSITIES SURVIVE TOUGH ECONOMIC CONDITIONS

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The recent economic recession threatened all traditional revenue sources possessed by colleges and universities. Resultant tuition increases have led stakeholders to demand greater accountability and fostered increased focus upon strategic financing from administrators. This paper examines the economic and political trends that have placed the financial stability of many universities in peril. In this context, rationales for diversification are discussed including portfolio theory and resource dependence theory. A fixed effects regression model was then developed in order to assess the impact of revenue diversification and tuition dependence on institutional revenue at private, non-research colleges and universities, finding that increasing revenue diversification in the years preceding the recession resulted in greater year-over-year total revenue per student.

INTRODUCTION

In March 2015, Sweet Briar College, a private liberal arts college with a heritage surpassing 100 years, announced that it would cease operations due to impending financial exigency. Far too many colleges and universities can relate to the economic challenges that Sweet Briar has experienced. Over the last three decades, dramatic changes have swept the higher education landscape. As traditional revenue sources have waned, institutions have responded in a variety of manners, from significant reductions in full-time faculty lines to the development new programs and delivery methods to reach non-traditional students. In some cases, the institution has been strengthened and revived; in others, like Sweet Briar College, the efforts have been in vain. In this context, the current paper examines revenue diversification as a potential strategy to increase continuity of funding during challenging economic conditions. The paper chronicles the significant changes in the financing of higher education, examines three rationales for revenue diversification, and then analyzes the effect of diversification on institutional revenue per student at a large sample of private, non-research institutions during the worst of recent economic periods. Implications for practice are then discussed.

FINANCING ENVIRONMENT

Because higher education has generally boasted increasing student demand, limited competition, and high-growth endowments, some stakeholders have historically viewed higher education as recession proof. In December 2007, however, the United States entered its longest economic recession since the Great Depression. The social and financial consequences of this downturn intensified changes in higher education finance that began in the 1970s. When the perfect storm of economic and political factors swept the landscape and traditional revenue sources declined, many administrators were left scrambling to find the necessary dollars to maintain existing levels of service. The realization that the sector is keenly sensitive to external factors has led many administrators to realize the value of a diversified revenue base.

The following sections examine the recent trends in the largest sources of revenue at private colleges and universities: endowment income, charitable giving, and tuition. Additionally, I discuss the dramatic changes in the public funding of higher education. While public funding primarily supports institutions under state-control, private colleges and universities benefit when their students receive government grants and may also experience

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fluctuating student demand when tuition levels at public institutions rise or fall as a result of changes in state appropriations. Appendix A displays the 24-year trend of major revenue sources for each institutional classification and reveals the shift in the funding mix that each experienced.

ENDOWMENTS

As the recession took hold in fiscal 2009, endowment values fell on average 23.2 percent, representing a collective loss of $96.9 billion in the sector (NACUBO, 2010). These investment losses, while historically unprecedented, have received a disproportionate amount of coverage in the literature when compared to their funding consequences. Even before the market decline, 85 percent of American colleges and universities had endowments below $100 million. At most institutions, the endowment contributes only a few million dollars to the annual operating funds even in bull markets. Further softening the effect of these losses is the fact that the endowment payouts are often calculated using a rolling average of total endowment value. These payout strategies smooth the effect of market fluctuations upon annual revenue. Additionally, for the ten years ending June 30, 2008, the average endowment rate of return was a positive 6.5 percent per year. Following the historic declines in 2008 and 2009, endowments only fell back to 2003 values. Most endowments then rebounded in fiscal years 2010 and 2011, with average increases of 10 percent and 17 percent, respectively, and have since reached record highs. While some elite institutions were forced to adjust their operations and ambitions due to the market decline, these temporary losses had a relatively small effect on the annual revenue of the average institution.

CHARITABLE GIVING

Investment losses and economic uncertainty led to significant declines in charitable giving during the Great Recession. According to the Giving USA Foundation (2010), charitable giving fell a combined 13 percent in 2008 and 2009. The Council for Aid to Education (2010) reported that giving to higher education experienced even greater declines during the recession. Gifts to postsecondary institutions declined 11.9 in 2009 – the largest annual decline in the 40 years that the Council has collected data. For most institutions, charitable gifts represents a larger share of annual revenue than do endowment payouts (AAUP, 2013; Weisbrod & Asch, 2010). Despite substantial investments in advancement, many institutions have recently experienced significant challenges in attracting these important funds.

STATE APPROPRIATIONS

For publicly-controlled institutions, state and local appropriations have historically represented the largest source of revenue. Private institutions can also benefit via state and federal grants that their students receive. However, since the mid-1970s, state funding of higher education has declined regardless of whether measured in appropriations per full-time equivalent (FTE) student, as a percentage of total revenue, or as a percentage of state spending. Despite significant increases in enrollment, state appropriations declined from $79.1 billion in 2001 to $72.6 billion in 2011. On top of a 5 percent decline in the 1990s, inflation-adjusted appropriations per FTE student fell 30.2 percent from $8,750 in 2001 to $6,105 in 2013 (SHEEO, 2014). State appropriations have not proportionately supported increased demand.

Secondly, the data in Appendix A show that state and local appropriations have significantly fallen as a percentage total revenue at public institutions. Compared to ten years prior, this revenue component fell between 9.6 and 13.2 percentage points, depending on classification. Compared to twenty years prior, this component fell between 16.0 percent and 21.6 percentage points. Finally, higher education funding declined from 7.8 percent of state spending in 1978 to 5.9 percent of state spending in 2006 (Rizzo, 2006).

The literature provide a long list of economic and political reasons for the downward trend. First, state budgets have been dramatically constrained by two economic recessions in the last decade as well as citizen-led tax revolts. A more significant reason, however, is the 30-year decline in the percentage of state budgets allocated to higher education. A shift in funds toward K-12 education, Medicaid, welfare, and corrections is primarily responsible for the reduction in public funding of higher education (Cheslock & Gianneschi, 2008; Mortensen, 2004; Weisbrod & Asch, 2010). Because higher education funding is not mandated on a per person basis as are other budget components, and because colleges and universities can increase tuition charges to offset appropriation shortfalls, many state legislators have regarded higher education as a discretionary budget item. When legislators seek to cut spending, higher education is often first on the chopping block. Unfortunately, when state economies recovered from recent recessions, higher education funding was not proportionately increased in order to restore past cuts.

TUITION

Over the past 25 years, the average cost of tuition and fees has increased faster than individual income, disposable income, consumer prices, and even health insurance (SHEEO, 2014). Table 1 shows the recent increase in inflation-adjusted tuition and fees for select years. In comparison to their predecessors 30 years prior, public and private four-year institutions placed 225 percent and 146 percent greater financial burden upon their students in 2014-2015.

Table 1

Average Tuition and Fees in Constant 2014 Dollars

Institution Type	1984–85	1994–95	2004–05	2009–10	2014–15
Public, 2yr	$1,337	$2,103	$2,615	$2,842	$3,347
Public, 4yr	$2,810	$4,343	$6,448	$7,825	$9,139
Private, 4yr	$12,716	$18,814	$25,215	$28,476	$31,231

Source: College Board (2014)

Although rising costs have had some effect on the price of higher education, a quick analysis of revenue components over time demonstrates that cost shifting has played a significant role. The Delta Project on Postsecondary Education Costs, Productivity, and Accountability (2010) found that during the 2000s, a noticeable change in financing occurred in which "institutions began to shift significantly more of the costs of education onto students" (p. 30). The report goes on to state that "the student share of costs is rising primarily to replace institutional subsidies – and not to enable greater spending" (p. 32). Ehrenberg (2006) captured the philosophical change that has led to this shift in the higher education cost burden:

Traditionally, public higher education has been viewed as a social good that yields benefits to the nation as a whole. But as earnings differences between highly educated and less educated individuals have widened – and the private economic return higher education provides its students has grown – policymakers have concluded that those students and their families should pay a greater share of the costs of public higher education. (p. 48)

The benefits-received principle holds that "individuals should be charged or taxed in accordance with the marginal benefits they receive from investment in the activity" (Paulsen, 2001b, p. 112). As arguments that higher education is primarily a private good have taken root, public funding has declined and tuition charges have increased.

Recent tuition and fee increases have come at the most inopportune time for students and families who have seen their ability to pay for higher education decline due to lower investment returns, falling home values, and rising unemployment. As heavily chronicled in the literature, higher tuition and fees have a negative effect on student access, institutional choice, retention, and degree completion with a disproportionate effect on low-income and minority students (Chen & DesJardins, 2008; St. John, 1990). Additionally, average student loan burdens increase dramatically when tuition and fees are raised, particularly as federal aid policy has shifted from grants to loans (Fossey & Bateman, 1998; Reynolds, 2012).

Cheslock and Gianneschi (2008) argued that "when tuition dollars cannot be increased further, higher education institutions will become especially reliant upon alternative revenue sources" (p. 210). It appears that such a time has arrived. Administrators have increasingly begun to explore strategies by which their institutions can diversify revenue sources. However, a deeper understanding of the effects of revenue diversification on institutional outcomes is a necessary step before implementing a focused diversification initiative. There has been no targeted study that examines how institutional efforts at revenue diversification might empower colleges and universities to improve certain outcomes or may open the institution to unforeseen risks. This paper is designed as a first effort to begin such an exploration.

LITERATURE REVIEW

This section presents the central theories supporting revenue diversification and examines the accompanying empirical evidence linking revenue diversification to associated outcomes. Literature within the field of higher education is examined along with more extensive empirical studies in the management literature. Three theories suggest that revenue diversification may be a wise organizational strategy and form the basis for existing empirical studies. These theories are cost sharing, portfolio theory, and resource dependence theory.

COST SHARING

Friedman (1980) and Johnstone (2005) have argued from principle that stakeholders should share the costs of higher education in proportion to the respective benefits received. Collectively, taxpayers benefit from the social, cultural, and economic well-being associated with increased numbers of citizens participating in higher education. A global study by the Organization for Economic Co-Operation and Development (2014) found that the net public return on higher education investment – primarily via increased tax revenue and reduced welfare expenditures – were, on average, three times the amount invested. Additionally, as more citizens attend and complete college, societal benefits such as volunteer rates, voting rates, charitable giving, and health increase, while corrections and welfare expenditures decrease (Baum, Ma, & Payea, 2013; Pascarella & Terenzini, 2005; Paulsen, 2001a).

On an individual level, students and families benefit via the economic and social status that a college degree confers. Baum, Ma, and Payea (2013) estimated that individuals with a Bachelor's degree have lifetime earnings that are 60 percent higher than peers who only completed high school. College graduates have also been shown to experience significantly lower unemployment than their less educated peers (Lumina, 2014). These "private" benefits have increased in recent years, both empirically and in perception, leading many colleges and universities to stress the individual economic value of a college degree in their marketing efforts.

Cost sharing proponents argue that diversification should be pursued when the various benefits received from higher education are not properly aligned with the costs paid by the respective beneficiaries. Because cost sharing proponents regard a larger share of higher education's benefits to be individual rather than collective, institutions should diversify their revenue by increasing the share contributed by students and parents at least until revenue from tuition and fees exceed those from taxpayer monies.

Cost sharing proponents argue that higher education's historical reliance upon taxpayer funding is both inefficient and unjust. Regarding efficiency, the cost sharing rationale builds upon human capital theory (Becker, 1993), which essentially argues that rational individuals will pursue higher education if the personal benefits (e.g., increased future earnings) exceed the associated costs (tuition, fees, and the opportunity cost of foregone employment). Although low-tuition or tuition-free public higher education is supported by all taxpayers, a disproportionate number of those who personally benefit from public subsidies to higher education are from middle, upper-middle, and high income families who could and would pay higher tuition and fee charges. Public subsidies, therefore, represent an inefficient use of taxpayer dollars. The inequity arises, it is argued, in that the taxes which support the subsidy are largely regressive and place the heaviest burden upon the lowest economic class, but disproportionately benefit middle and upper-income households which produce the majority of college students (Friedman, 1980). Cost sharing proponents, therefore, have argued that public subsidies to higher education serve as a transfer payment from the poor to high income families.

The cost sharing rationale has faced strong opposition. In many countries, including the United States, higher education is seen as a social entitlement. Johnstone (2002) argued that "any policy that seeks to impose a new or a sharp increase in the price of a good or service that has come to be viewed as an entitlement, especially one so seemingly noble and socially important as higher education, will be fiercely contested" (p. 27). Recent tuition increases have already resulted in heated protests. Cost sharing is also bound to lead to ideological and political conflicts, including the means used to calculate which benefits are public and which are private.

PORTFOLIO THEORY

The second rationale for diversification stems from Markowitz's portfolio theory (1952) and is put forth from an economic or financial perspective. It is argued that through revenue diversification, an organization can reduce the volatility of its funding and increase the probability that it will remain financially viable. Revenue stability is framed as a variable over which organizations have some level of control, if administrators would simply not put all their eggs in one basket. When funding is heavily concentrated in a few sources, a decline in revenue from one source is likely to lead to a significant budget shortfall. When revenue is drawn in a balanced measure from dissimilar revenue streams, favorable deviations in one source may offset or compensate for an unfavorable deviation in another, thereby reducing volatility. In the latter scenario, actual revenues are more likely to meet budgeted targets, thereby providing greater long-term stability.

RESOURCE DEPENDENCE THEORY

A third rationale for diversification is drawn from resource dependence theory (Pfeffer & Salancik, 1978). It is argued that organizations put themselves in vulnerable positions when they rely on a small number of funding sources. In such a scenario, external parties may exercise significant influence over the institution by challenging its values and mission, the way the organization delivers its product, or even the product itself. By utilizing multiple sources of revenue, colleges and universities place themselves in a more powerful position where they are less dependent upon any single source. As a result, the likelihood of goal displacement (the modification of mission-related objectives so as to satisfy certain external parties) is reduced.

OBJECTIONS

The argument against revenue diversification comes from traditionalists who believe that higher education is a unique, economically inelastic institution and that wider engagement with the market will have a negative effect on its mission (Bok, 2003; Campbell & Slaughter, 1999; Neely, 1999; Slaughter & Leslie, 1997). It has also been argued that diversification may undermine non-profit legitimacy and weaken justification for receiving tax exemptions. Former Harvard President Derek Bok (2003) cautioned that "something of irreplaceable value may get lost in the relentless growth of commercialization" (p. 17). If higher education were to sell out in the pursuit of new revenue, the academy may be in danger of losing its soul.

Increasing financial austerity as well as the divergence between funds available from traditional sources and the rising costs of higher education has made such a position untenable, however. McPherson (1999) summarized the prevailing counter-argument:

> A single-minded determination to preserve educational purity and sever our connection to practical demands would leave us not only with greatly diminished resources, but with a greatly diminished voice in society and little basis beyond our own self-certainty for confidence in the effectiveness and value of what we do. (p. 27)

Today's colleges and universities should must a double vision, keeping one eye on the market and the other eye on the goals of the academy. The most effective institutions are those which effectively reconcile the perceived conflict between business principles and university ideals by taking advantage of opportunities that grow revenue and enhance institutional values.

EMPIRICAL STUDIES OF REVENUE DIVERSIFICATION

The empirical research within the field of higher education is quite sparse with the exception of the studies examining the effects of cost sharing. While tuition increases have the benefit of increasing institutional funds without simultaneously adding new costs or diverting faculty from their core responsibilities, numerous studies have examined the consequences upon access and equity. Virtually all studies have found an inverse relationship between tuition and student enrollment and between tuition and persistence (Heller, 1996; Hsing & Chang, 1996; Kane, 1994; St. John, 1990). Scholars have suggested that high tuition, even when supported by need-based financial aid, harms low-income and minority students. Underrepresented students and their families often do not understand that high tuition can be offset by various forms of financial aid (Collison, 1988; Dynarski & Scott-Clayton, 2006).

Although no empirical study in the field has shown that colleges and universities with a highly diversified revenue mix perform differently than their less diversified peers, a number of studies in the management literature have revealed the benefits of diversification to non-profit organizations (NPOs). Theories and empirical studies from this literature are applicable to higher education for two reasons. First, both colleges and universities and NPOs operate in "trust markets" characterized by asymmetric information (Winston, 1997). Secondly, firms in both sectors are typically motivated more by idealistic goals than are normal business firms.

Chang and Tuckman (1994) examined over 100,000 NPOs and found that 94 percent were funded by more than one source but that considerable variation existed. The authors found that in comparison to their less diversified peers, highly diversified non-profits had stronger financial positions, particularly higher operating margins and larger net assets. Greenlee and Trussel (2000) found that diversification decreased financial vulnerability, defined as a reduction in program expenditures in each of three consecutive years. Trussel (2002) expanded on this work with a later study finding that highly diversified non-profits were significantly less likely to experience a 20 percent reduction in net assets over three years. Multiple studies have found that revenue diversification reduced the likelihood that an organization would cease operations (Bielefeld, 1994; Hager, 2001; Tuckman & Chang, 1991). Finally, Carroll and Stater (2008) conducted the largest empirical study to

date. The authors examined nearly 300,000 NPOs across 13 years, finding that increased revenue diversification reduced revenue volatility.

In the management literature, diversification strategies are evaluated based on their effectiveness at reducing volatility and goal displacement, virtues corresponding to portfolio theory and resource dependence theory. Froelich (1999) proposed two additional criteria for evaluating diversification strategies: those related to organizational processes and structure. When viewed through this lens, all revenue dollars may not be created equal. Administration should focus not only on changes in net revenue, but whether revenue is becoming more stable, thereby allowing greater confidence in the pursuit of long-term strategies. Additionally, management should evaluate whether the strategy reduces organizational dependence on external parties, thereby allowing greater autonomy and less goal displacement. The literature goes on to examine private contributions, government funding, and commercial activity using these criteria.

Private contributions. Although traditionally seen as the cornerstone of non-profit funding, when evaluated based on volatility and goal displacement, the literature suggests that private contributions may be problematic. Gronbjerg's (1993) case studies of non-profit funding revealed the unpredictability of private giving. Sixteen of the 29 unique donation-related streams reported by NPOs showed average annual changes in excess of 50 percent. Executives from NPOs drawing a high percentage of revenue from private donations reported that they often passed over potential growth or service opportunities due to funding uncertainty and were forced to prepare contingency plans in case of funding fluctuations.

A potentially more serious consequence of private contributions is goal displacement. Weisbrod (1998) suggested the optimal funding structure was embodied by the "pure" non-profit organization. Entirely dependent upon no-strings attached contributions, "the organization can produce the outputs it prefers and distribute them as it wishes" (p. 168). However, the critical mass of research studies suggests that few "pure" NPOs exist. Gronbjerg (1993) found that when it comes to private contributions, "discretion and flexibility may be more imagined than real. Each of the many different types of donations presents complex exchange relationships" (p. 146). DiMaggio's (1986) qualitative study of NPOs in the arts suggested that major donors, which often anchor funding campaigns, have significantly more interest in exerting control over an organization than does the average giver. Small numbers of wealthy elite may then exert undue influence over organizations adopting such a strategy.

Likewise, gifts from corporations and foundations were shown to lead to high levels of goal displacement as jointly sponsored programs have increasingly involved their financial backers in program governance. Useem (1987) argued that today's corporate-based philanthropy is "more closely aligned to immediate corporate self-interest…and more transforming of the recipient organizations" (p. 353). NPOs may also experience significant goal displacement by tailoring their programs to match the publicly announced funding programs of major foundations or by accepting large, one-time gifts. Kelly (1991) found that when foundations provide start-up funding, but inadequate operating support, an NPO is often forced to reallocate its own internal funds toward fulfillment of the grantor's purposes, which often resulted in dramatic goal displacement.

Finally, the literature reveals that altering an entity's funding relationship with various external entities has significant potential to change its organizational processes and/or organizational structure (Froelich, 1999). NPOs and their staffs may see their accustomed way of doing business shift in response to new dynamics associated with these resource providers. For example, additional staff may be required to create the accountability metrics that funding agreements require. If the procedural and structural effects related to a diversification strategy clash strongly with the present culture and capabilities of an organization, managerial challenges are likely to result. Over time, a professionalized form of administration resembling the for-profit sector may develop.

Government funding. Although challenged by present economic conditions, government funding was the least volatile revenue source in Grongberg's study. NPO directors reported that once a contract was received, continuity and predictability of funding was highly likely. In an earlier study, Gronbjerg (1990) concluded that greater reliance upon government funding increased the predictability of institutional revenue, in part because public sector managers depend upon the services of NPOs. Put another way, the funding relationship between

NPOs and government agencies has greater mutual dependence in comparison to the relationship between NPOs and private donors. Although the complexity and effort in securing governmental funding was high, Gronbjerg (1990) stated that "greater continuity in and predictability of public grants (compared to donations and fees) make them particularly attractive" (p. 33). Kingma (1993) found that NPOs drawing a greater percentage of revenue from government sources experienced lower than average revenue volatility.

Government revenue was also found to be more broadly accessible than private contributions (DiMaggio, 1986; Gronbjerg, 1993). In comparison to private contributions which tend to favor large, popular organizations, government support was more widely dispersed. Goal displacement effects may then be more moderate than are those related to private contributions. Salamon's (1987) review of government-NPO relations concluded that relatively little shift in mission occurred when institutions diversified through government funding.

Significant process and structure effects are associated with diversification through government funding, however. To ensure that recipients meet statutory requirements, government agencies often require that organizations provide standardized measures of effectiveness and efficiency on a recurring basis. Increased compliance requirements may divert the efforts of management away from mission. Alternatively, in order to manage its more involved relationship with various government entities, organizations may retain professional administrators who know very little about its mission. Froelich (1999) cautioned that should an NPO diversify through government funding, it "risks losing its unique character as it increasingly mirrors the structure and behavior of a government agency" (p. 257).

Commercial activity. In 2011, fees for goods and services accounted for 69.8 percent of total non-profit revenue, by far the largest share (Pettijohn, 2013). Earned income ventures are not new to the non-profit sector. For centuries, universities have charged tuition, hospitals have charged for health care, and theater groups have charged performance admission. However, the more recently conceived notion of "social enterprise" has suggested that NPOs broaden their scope of commercial ventures in order to expand their impact and bolster finances.

A chorus of protests has argued that commercialization will result in forfeiture of the distinctive values of the non-profit sector. Commercial activity may undermine the ability of NPOs to act in the public interest or lead to loss of tax-exempt status (Bush, 1992; Kramer, 1985; Tuckman, 1998; Weisbrod, 2004). Managerial behavior may be altered and organizational goals displaced in the pursuit of market-based revenue. Worse still, non-profits that don't pass the test of the marketplace may then be discontinued, robbing society of valuable contributions. Foster and Bradach (2005) argued against encouraging NPOs to pursue the "holy grail of earned income" writing that "sending social service agencies down that path jeopardizes those who benefit from their programs and harms society itself, which depends for its well-being on a vibrant and mission-driven nonprofit sector" (p. 100).

A number of studies have challenged the pure traditionalist arguments against commercialization, however. Although some commercial activities are mission-neutral and only serve to drive revenue growth, many others provide both revenue diversification and further the organizational mission. The sale of Girl Scout cookies, for example, serves to generate revenue and provide opportunities for girls to gain experience, build character, and learn business skills. For social service non-profits like Goodwill Industries that have a mission to provide recovery and job-training programs, their commercial activities not only fund a portion of their program but also provide employment for those they serve.

Commercial ventures tied to mission appear to be far more common than are unrelated activities. In a study of six national social service NPOs, Young (1998) found that significant efforts were made by all leaders to avoid activities that would harm their organization's mission. Young found that although the connection between the commercial venture and the organizational mission was often subtle, the mission was in fact the overriding consideration in management discussions regarding which commercial activities to pursue. He concluded:

> New sales initiatives, imposition of fees for mainline services, and collaborations with business all appear to be driven by a combination of desires to promulgate favored mission-related services and to generate surplus revenues. It appears to be the rare initiative that does not contain elements of both these motivations. (p. 295)

In Adams and Perlmutter's (1991) study, seventy percent of those surveyed reported that the organization's mission-related services were expanded by commercial ventures. Fifty-eight percent reported that the venture enabled the agency to serve new populations who otherwise would not have been reached. NPO leaders appear to take these initiatives seriously and utilize them to advance the mission. Commercial revenue, then, may be particularly attractive because such revenue is flexible and results in the least goal displacement of any major revenue source.

The literature is mixed when addressing the volatility of non-profit enterprise. Gronbjerg (1993) found that the predictability and controllability of commercial revenue depends heavily on "the extent to which [non-profits] have linked their market niche and mission, how they have structured their fee relationships, and how they couple these to other agency resources" (p. 119-120). Large and medium-sized NPOs with significant resources were shown to have more success and less volatility in commercial ventures than were smaller organizations (Adams & Perlmutter, 1991; Bielefeld, 1992). Although a number of market-based initiatives do fail within the first few years, volatility for the bulk of commercial activities appears mitigated by institutional inputs and management skill. Commercial activity, then, displays lower volatility than private contributions, yet higher uncertainty when compared to government funding.

Diversification through commercial activity has also been shown to have related process and structural effects. Management may assume a more business-minded mentality and increase the accountability of program officers. New initiatives may require more cost-benefit analysis and rationalization before being pursued. Studies by Adams and Perlmutter (1991) and DiMaggio (1986) found some evidence that diversification through commercial activity led to increasing the number of finance and marketing personnel and a shift in board composition away from those with a social service focus and toward those with significant business or entrepreneurial experience.

SUMMARY

In line with the underlying diversification theories, the literature presented four criteria by which a strategy's effectiveness should be assessed. Strategies were evaluated primarily upon revenue volatility and goal displacement with secondary consideration of procedural and structural effects. Table 2 summarizes the effectiveness of the three diversification strategies found within the literature.

Table 2
Summary of Revenue Characteristics

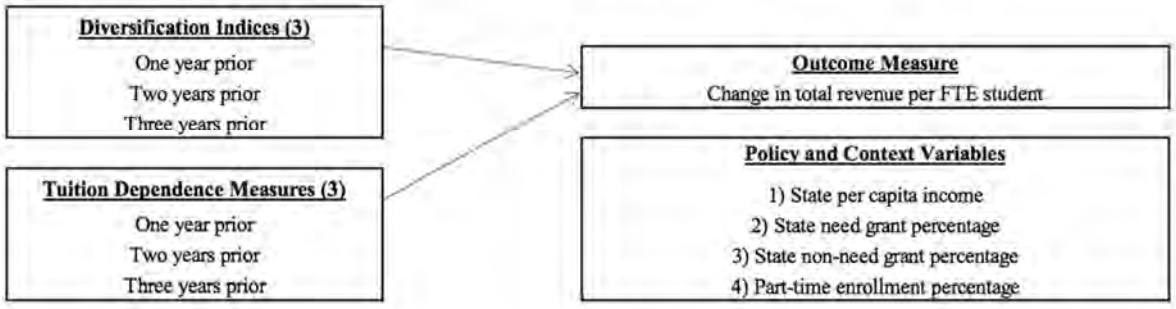
Characteristics	Private Contributions	Government Funding	Commercial Activity
Revenue volatility	High	Low	Moderate
Goal displacement	High	Moderate	Low
Procedural effects	Formalization	Standardization, Accountability	Rationalization
Structural effects	Professionalization	Bureaucratic	Professionalized business forms

Private contributions were shown to have the highest revenue volatility and also the highest potential for goal displacement. Government funding, while typically the most stable revenue source, was shown to have moderate goal displacement effects. Finally, commercial activity was shown to have moderate volatility but significantly less goal displacement compared to the other two strategies. Each strategy was shown to have differing constraints as well as differing procedural and structural effects.

CONCEPTUAL MODEL AND HYPOTHESES

Building off the theories and research previously developed, Figure 1 presents a conceptual model of the relationship between revenue diversification and the change in total revenue per FTE student.

Figure 1 - Conceptual Model of Revenue Diversification



Two sets of independent predictors (diversification indices and tuition dependence measures) are created. For each set, one predictor is utilized for each of the one, two, and three years prior to the outcome measure. For example, revenue diversification indices and tuition dependence measures for years 1, 2, and 3 serve as predictors for year 4 dependent observation. Such an approach is warranted because the effects of revenue diversification and tuition dependence on the flow of actual dollars and institutional structures likely lag. The calculation of each set of independent variables and justification for their inclusion are provided in the methodology section of this paper.

Following portfolio theory, it is hypothesized that when revenue diversification increases, greater stability of revenue likely follows. Increased diversification may reduce an institution's vulnerability from a decline in any one source and yield greater revenue per FTE student. When hypothesizing about the relationship between a diversification index and the change in total revenue, it is crucial to know that the diversification index as operationalized is inversely related to the level of institutional diversification. As developed in the following section, a low index corresponds to a high level of diversification while a high index corresponds to a low level of diversification. The relationships between the independent diversification indices and the change in total revenue per FTE student are, therefore, theorized to be negative (H1).

The effect of tuition dependence upon revenue is less intuitive. Portfolio theory suggests that greater reliance upon any one investment with varying returns rarely minimizes instability – even if returns from that source are more consistent than those of alternative investments. Although equity investments have historically had greater variability than bond investments, financial managers have effectively diversified fixed-income portfolios with some stock holdings to reduce the risk of the entire portfolio. If a similar logic holds in the financing of higher education, reducing dependence upon tuition may actually increase institutional revenue, even if the alternative source is more irregular.

However, when compared to the other four sources, tuition is the least volatile and, along with commercial revenue, the least restricted in terms of use. If the best revenue source is the one possessing the least volatility

and that which is least likely to come with commitments that alter the goals of the institution, tuition dollars are the magic elixir of higher education finance. Thus, the relationships between the tuition dependence measures and the change in total revenue per FTE student is theorized to be positive (H2).

METHODOLOGY

Population and Sample

The various models of American higher education (community college, research university, etc.) have significant implications on their funding. The financing options for a public research university are considerably different than those available to a private, liberal arts college with 1,000 students. The Carnegie Foundation has provided a useful and often employed typology for classifying institutions based primarily on the level of degree offering and institutional control. For this study, institutions classified as Private Non-profit Bachelor's or Private Non-profit Master's serve as the population.

This population was chosen because private, four-year institutions are typically the most tuition dependent. Research universities were excluded because the funding options available to these more complex institutions exceed those available to Bachelor's and Master's institutions. Development of research facilities and adoption of extensive Ph.D. programs, for example, are unattainable strategies for many of the smaller institutions. A small number of institutions (15) lacked sufficient revenue data, leaving a total of 814 institutions, to serve as the sample. These institutions were geographically spread across 49 states (none from Wyoming) and Puerto Rico. For the 2009-2010 academic year, sampled institutions had an average enrollment of 2,819 and awarded an average of 648 degrees.

Data Collection Procedures

The primary data source for the study was the Delta Cost Project's 24-year matched dataset which is maintained by the National Center for Education Statistics. The dataset contains extensive information regarding sources and uses of institutional funds. Data for endowment income was unavailable in the Delta Cost dataset but was collected from the Integrated Postsecondary Education Data System (IPEDS), a dataset often utilized by other studies in the field. State per capita income, used as a control variable, was gathered from the Bureau of Economic Analysis, a division of the United States Department of Commerce. To control for each state's funding policies, data on each state's need and non-need (merit) grants were gathered from the National Association of State Student Grant Aid Programs' (NASSGGAP) Annual Surveys, while the average public tuition charge was derived from IPEDS data. When variables are described or analyzed in the following sections, the variable name given is that found in the Delta Cost Project's data dictionary or the IPEDS data dictionary.

Independent Variables

Six independent variables are included in the model. For each of the two following types of measures, one predictor is created for each of the one, two, and three years prior to the outcome measure. For example, measures for 2007, 2008, and 2009 serve as predictors for the 2010 dependent observation. Such an approach is warranted because the effects of revenue diversification and tuition dependence on the flow of actual dollars likely lag. The two types of predictors utilized in this study are diversification indices and tuition dependence measures.

Diversification Indices. Diversification indices are designed to calculate the concentration of institutional revenue. Revenue was classified into five mutually exclusive categories which capture the entirety of revenue received by each school. These five sources are:

1) Tuition – This category is derived from the variable (nettuition01) and represents the net amount received from students after institutional grant aid is provided.

2) Governmental – This category sums three variables (state_local_grant_contract, state_local_app, federal10_net_pell) and represents the amount received from governmental agencies regardless of whether it was an appropriation, a grant, or a contract.

3) Private – This category is derived from the variable (private03) and represents the amount received from private sources regardless of whether it is an appropriation, a grant, or a contract.

4) Endowment income – Endowment values were collected for each institution from the IPEDS database. I then determined the average endowment value in the three years prior to the observation year and multiplied that average by five percent in order to estimate the institution's endowment revenue. This measure, though an estimate, provides a much more theoretically correct valuation for endowment income than does the measure in any available dataset.

5) Auxiliary and affiliate – This category is derived from the two variables (auxother_rev, affiliate01) and includes revenue sources often indirectly associated with institutional mission, such as revenue from residence halls, food service, athletics, hospitals, and university presses. These sources accounted for 56.1 percent, 4.9 percent, 13.5 percent, 5.5 percent, and 20.0 percent, respectively, of total revenue for the years of this study.

Drawing from empirical studies in the management literature, I utilized a form of the Hirschman-Herfindahl Index (HHI), which is a continuous variable representing revenue concentration. The index is calculated by squaring the proportion of total revenue that each source comprises and then summing the resulting numbers. With five variables in the index, the maximum level of diversification would yield an index of 0.2 (calculated as .22+.22+.22+.22+.22). The minimum level of diversification would yield an index of 1.0.

Tuition Dependence Measures. The second set of independent predictors measures institutional tuition dependence. These measures were included for two reasons. First, tuition revenue holds a high level of significance (on average 56.1 percent) for sampled institutions. Second, tuition is one of the most stable and least restricted sources when compared to the other financing mechanisms. Tuition revenue is derived from the variable (nettuition01). To obtain a measure of tuition dependence, (netuition01) was divided by the sum of all five sources previously identified.

Dependent Variable

Total revenue for each year is captured by the sum of the five sources used in the diversification indices (tuition, governmental, private, endowment income, and auxiliary/affiliate). I first converted total revenue for each year to total revenue per FTE student by dividing total revenue by the variable (fte12mn), which is the sum of an institution's FTE undergraduate, graduate, and professional student enrollment. The percentage change in year-over-year revenue per FTE was then calculated and reduced by the year's inflation rate (as measured by the hepi_scalar_2010 variable) so as to provide a close approximation of the real dollar change in total revenue per student.

Statistical Model

Two types of variation are found in this type of panel data: inter-school and intra-school. Inter-school variation occurs between the outcomes from one institution to another. Institution A and Institution B may both possess a diversification index of 0.5 and a tuition dependence measure of 60 percent, but still produce vastly different financial outcomes given the different context in which each institution functions. Institutional size, effective leadership, and numerous environmental variables all could affect an organization's ability to diversify as well as the related outcomes. Intra-school variation, on the other hand, occurs within a single institution over time. The effectiveness of a fixed effects regression model is that it allows one to focus on intra-school variation, determining the actual effects of changes revenue diversification and tuition dependence. Inter-school

variation is not used to estimate the regression coefficients, because this variation likely reflects omitted variables. A fixed effects regression model addresses these time-invariant unobserved variables by setting each institution as its own control, thereby accounting for a more complete environmental context.

Three observation years, 2008-2010, were utilized in this study. This time period was an intuitive choice as it corresponds to the primary years of the Great Recession. An examination of this period may reveal effective strategies that allow an institution to remain viable during the most challenging of economic times. Independent variables for each of the three years prior to observation were included as predictors as shown in Table 3.

Table 3. Independent Predictor Variables and Dependent Observation

	Independent Variables						Dependent Variable
	Diversification Indices			Tuition Dependence Measures			
	1 year prior	2 years prior	3 years prior	1 year prior	2 years prior	3 years prior	
Observation #1	2007	2006	2005	2007	2006	2005	2008
Observation #2	2008	2007	2006	2008	2007	2006	2009
Observation #3	2009	2008	2007	2009	2008	2007	2010

Policy and Context Variables

A fixed effects regression model does not account for variables which are not static. Significant shifts in the institutional or environmental context could bias results. As a result, four policy and context measures were added to the model in order to observe their potential effects on an institution's ability to diversify and the outcome of such a strategy. Based upon reviews of the literature, variables were included for the state per capita income, the availability of financial aid in the state, and the percentage of part-time enrollment.

State per capita income. Per capita income in the United States changed 3.6 percent, -5.6 percent, and 3.0 percent, for the years 2008, 2009, and 2010, respectively. Changes in personal income affect income taxes, disposable income, mortality, cost of goods and services, and postsecondary enrollment (Friedman, 2008). In order to aid in the interpretation, the variable was entered in thousands of dollars ($40,000 was entered as 40.0). A one unit change represents a $1,000 change in the state per capita income.

State need grant percentage and state non-need grant percentage. State policies related to the financing of education link directly to outcomes such as high school graduation rates, achievement scores, and postsecondary enrollment. The historic model of state funding to higher education provided subsidies directly to public institutions. The result was a relatively low tuition charge to the student, but a high cost to taxpayers. Breneman and Finn (1978) advanced the notion that higher education financing would be more efficient and equitable if state subsidies were instead provided directly to students. Such a market-like system, it has been argued, would promote student choice (Friedman, 1980). Funding shifts toward students tend to benefit private colleges and universities because their students are provided financial aid which they previously did not have and because the price differential to public institutions is lessened when public institutions increase tuition charges to compensate for the reduced appropriation.

Over time, some states began providing both need and non-need grants directly to students, regardless of whether the student enrolled in a public or private university. These financing policies, however, vary significantly by state and change across time. As the recession unfolded, many states scaled back both need and non-need-based aid programs. To account for shifts in state financing policies, two variables were utilized: the average state need grant as a percentage of average public tuition and the average state non-need grant as a percentage of average public tuition. An increase in either variable typically represents greater state funding being provided directly to students. The grant data were gathered from the annual NASSGAP surveys on state-sponsored financial aid. The average tuition charge was determined via IPEDS data by weighting the amount of tuition charged a full-time student at each four-year public campus in the state by the FTE enrollment of each campus.

Part-time enrollment percentage. In recent years, many institutions in the sample have expanded course offerings to attract part-time students. These part-time programs supplement revenue from traditional, full-time students and frequently buffer private universities from year-over-year changes in matriculation. The part-time enrollment percentage was determined by dividing the variable (total part-time) by the variable (total enrollment). This figure was then multiplied by 100 to aid in the interpretation of results.

DATA ANALYSIS

Descriptive statistics. Table 4 provides standard descriptive statistics of the data.

Table 4
Means, Standard Deviations, Range Values, and Missing Data

	All Observations (n=2,442)				
Variable	Mean	Standard Deviation	Range Min	Range Max	Missing Data
State per capita income (in thousands)	39.223	6.735	16.300	71.220	0
State need grant pct	7.50	4.95	0.00	19.59	0
State non-need grant pct	3.85	9.35	0.00	54.65	0
Part-time enrollment pct	20.83	17.76	0.00	100.00	0
Diversification index - 1 year prior	0.443	0.143	0.220	0.980	0
Diversification index - 2 years prior	0.435	0.140	0.220	0.976	0
Diversification index - 3 years prior	0.433	0.139	0.220	0.976	0
Tuition Dependence measure - 1 year prior	56.07	17.76	0.00	98.99	0
Tuition Dependence measure - 2 years prior	55.00	17.68	0.00	98.76	0
Tuition Dependence measure - 3 years prior	54.87	17.61	0.00	98.76	0
Change in total revenue per FTE student	-0.29	17.31	-75.14	203.75	32

	2008 Observation (n=814)					2009 Observation (n=814)					2010 Observation (n=814)				
Variable	Mean	Standard Deviation	Range Min	Range Max	Missing Data	Mean	Standard Deviation	Range Min	Range Max	Missing Data	Mean	Standard Deviation	Range Min	Range Max	Missing Data
State per capita income (in thousands)	40.168	6.833	17.700	70.686	0	38.178	6.384	17.300	68.093	0	39.324	6.838	16.300	71.220	0
State need grant pct	7.94	4.83	0.00	19.24	0	7.70	5.04	0.00	19.59	0	6.86	4.93	0.08	18.00	0
State non-need grant pct	4.05	9.69	0.00	54.65	0	4.02	9.62	0.00	54.11	0	3.49	8.71	0.00	49.70	0
Part-time enrollment pct	21.01	17.77	0.00	100.00	1	20.81	17.69	0.00	100.00	0	20.69	17.82	0.00	100.00	0
Diversification index - 1 year prior	0.434	0.139	0.220	0.964	0	0.438	0.141	0.224	0.962	0	0.456	0.147	0.231	0.980	0
Diversification index - 2 years prior	0.431	0.138	0.224	0.976	0	0.443	0.139	0.220	0.964	0	0.438	0.141	0.224	0.962	0
Diversification index - 3 years prior	0.435	0.139	0.231	0.954	0	0.431	0.138	0.223	0.976	0	0.434	0.139	0.220	0.965	0
Tuition Dependence measure - 1 year prior	54.72	17.79	0.97	98.17	0	55.65	17.69	1.10	98.04	0	57.84	17.69	0.00	98.99	0
Tuition Dependence measure - 2 years prior	54.62	17.56	0.00	98.76	0	54.72	17.79	0.97	98.17	0	55.65	17.69	1.10	98.04	0
Tuition Dependence measure - 3 years prior	55.28	17.48	0.00	97.67	0	54.62	17.56	0.00	98.76	0	54.72	17.79	0.97	98.17	0
Change in total revenue per FTE student	-0.98	17.80	-71.48	124.92	14	-0.37	17.31	-75.14	181.56	8	0.48	16.79	-69.03	203.75	10

Descriptive statistics reveal significant variation across all variables. Regarding environmental variables, per capita income ranged from $16,300 (Puerto Rico) to $71,220 (Washington, D.C.) in 2010. Although each state or commonwealth provided some measure of direct student aid, financing policies vary significantly, as do part-time enrollments across institutions.

Regarding predictor variables, significant variation exists in both the diversification indices and the tuition dependence measures. Some institutions had at least one year's index above 0.95 (Michigan Jewish Institute, City University of Seattle, Trinity International University), while others had at least one year's index below 0.25 (Lyon College, Centenary College of Louisiana, Kentucky Wesleyan College, Mount Holyoke College), the latter being much more diversified than the former. Similarly, some institutions (Berea College, Bryn Athyn College) regularly drew less than 2 percent of their annual revenue from tuition while many others drew greater than 90 percent of their annual revenue from tuition. A review of tuition dependence across time reveals that on average institutions in the study increased their reliance upon tuition over the study's observation years. Tuition dependence in years 2006-2010 was 54.6 percent, 54.7 percent, 55.7 percent, 57.8 percent, and 58.6 percent, respectively. A review of the dependent variable reveals a relatively large standard deviation and a wide range, though the mean outcome was within one percent of inflation across each year.

Cross tabulation tables. Appendix B displays multiple cross tabulation tables in which sampled institutions were grouped in quintiles based on the six predictor variables. Institutions were ranked from most diversified (lowest index) to least and from most tuition dependent (highest tuition dependence measure) to least. The outcome tended to vary across diversification quintiles with the exception of 2009, the worst of the recession years. In that year the sector saw historic declines in both endowment values and charitable giving, two of the five components of the diversification index. In 2009, institutions in the first and second quintiles of revenue

diversification according to the prior year's index reported significant average declines in total revenue per FTE student, while institutions in the third and fourth quintiles experienced, on average, slight increases. Institutions in the lowest quintile, interestingly, saw a 2.4 percent increase in total revenue per FTE student. In regards to tuition dependence, greater tuition dependence proved beneficial, particularly in 2009. The top three quintiles (per the prior year's measure) reported average increases in total revenue per FTE student, while the bottom two quintiles experienced average declines of 3.6 percent and 4.4 percent, respectively. The last quintile of tuition dependence (per the prior year's measure) experienced the greatest average decline in revenue per FTE student in each observation year.

RESULTS

Table 5 presents the regression coefficients and significance levels for the model.

Table 5
Regression Results
N=2,410

Variables	Context Model	Index Model	Full Model
Policy and context variables			
State per capita income (in thousands)	-0.225	-0.206	0.001
State need-based grant percentage	-0.800 *	-0.534	-0.051
State non-need-based grant percentage	-0.146	0.216	1.239 **
Part-time enrollment percentage	0.178	0.219	-0.040
Diversification indices (for each 0.1 change)			
1 year prior		5.685 ***	-8.829 ***
2 years prior		-0.507	-3.020 **
3 years prior		2.449 *	-1.218
Tuition dependence measures			
1 year prior			1.938 ***
2 years prior			0.244 **
3 years prior			0.321 ***
F-Value (model)	1.29	4.11 ***	33.28 ***
Degrees of freedom (model)	1,594	1,591	1,588
F-Value (additional variables)		7.85 ***	99.54 ***

*p<.1 **p<.05 ***p<.01

The model had a statistically insignificant F-value of 1.29 in the context model. However, it was improved significantly in the index and full models, which were both statistically significant. Following both the second

and the full iterations, a partial F-test was conducted on each block of added variables which revealed that both the diversification indices and the tuition dependence measures were statistically significant. In the full model, the average state non-need grant as a percentage of average public tuition was the only policy or context variable having a significant effect. A one percent increase in this measure accounted for a 1.24 percent increase in total revenue per FTE student. The dollar impact of changes in state non-need-based aid to the institutional revenue of private universities is sizeable. In 2009, institutions in the sample reported an average total revenue per FTE student of $23,900. Controlling for inflation, a 1.24 percent decline would result in an estimated $296 less revenue per FTE student in 2010. When multiplied against the average enrollment of sampled institutions (2,580), total institutional revenue would fall an estimated $764,000 in 2010 should the average institution be located in a state that reduced the percentage of public tuition provided directly to students through non-need grants by one percent.

In the index model, significant coefficients were found regarding the effect of the diversification indices one year prior and three years prior. Counterintuitively, increases in these indices (which signal a reduction in diversification) increased revenue per FTE student during the observation years. Such a finding may seem inconsistent with portfolio theory until one remembers that each of the five classifications of revenue sources vary in volatility and the likelihood of goal displacement as previously discussed. Institutions in the study are on average funded by at least 55 percent tuition revenue in each observation year. An increase in revenue diversification, therefore, most often signals a shift away from tuition revenue toward a more volatile source. Therefore, because of the significance of tuition revenue to institutions in the study and because of the relative stability and freedom of use that tuition revenue represents, tuition dependence measures were added to the model in order to more accurately assess the impact of changes in institutional revenue structure.

When tuition dependence measures were added in the full model, the effect of the prior year's diversification index remained significant but changed direction, while the three year prior index became insignificant. The diversification index effect for the second year prior became significant and was also negative. As previously discussed, the diversification index is inversely related to the level of institutional diversification. Once measures of tuition dependence were added, a 0.1 unit decrease in the prior year's diversification index (an increase in institutional diversification) resulted in an 8.83 percent increase in year-over-year revenue per student. A 0.1 unit decrease in the diversification index from two years prior resulted in a 3.02 percent increase in year-over-year revenue per student.

A 0.1 unit decrease in the index represents a sizeable shift in revenue structure, but it is not uncommon. Table 6 displays the 2006-2010 revenue structures and diversification indices for three institutions included in the sample. Each institution became more diversified during this time period, as evidenced by the declining indices. However, each institution utilized different means to effect this diversification. American Jewish University had historically relied upon private giving for more than two-thirds of its annual revenue. During the recession, the university reduced its reliance upon private giving while increasing the amount of revenue drawn from auxiliary and affiliate sources, as well as tuition. Hampshire College also increased the amount of revenue drawn from auxiliary and affiliate sources, which allowed the institution to reduce its tuition dependence from over 70 percent to below 60 percent. Finally, whether intentionally or as a result of market conditions, Rockhurst University decreased its reliance upon auxiliary and affiliate revenue and increased its tuition dependence. Each approach was effective in reducing dependence upon the institution's primary revenue source.

Table 6. Year-over-Year Changes in Diversification Indices, Select Institutions

		Components of Total Revenue by Percentage						
Institution	Year	Tuition	Governmental	Private	Endowment Income	Auxliary & Affiliate	Index	Change
American Jewish University	2006	0.114	0.013	0.666	0.022	0.185	0.491	
	2007	0.103	0.003	0.684	0.016	0.194	0.516	0.025
	2008	0.133	0.006	0.486	0.030	0.345	0.374	-0.142
	2009	0.177	0.013	0.448	0.043	0.319	0.336	-0.038
	2010	0.149	0.008	0.462	0.042	0.339	0.352	0.016
Hampshire College	2006	0.737	0.011	0.099	0.033	0.120	0.569	
	2007	0.774	0.011	0.100	0.036	0.079	0.617	0.048
	2008	0.711	0.009	0.091	0.036	0.153	0.539	-0.078
	2009	0.605	0.014	0.106	0.041	0.234	0.434	-0.105
	2010	0.598	0.023	0.101	0.040	0.238	0.427	-0.007
Rockhurst University	2006	0.127	0.004	0.031	0.013	0.825	0.698	
	2007	0.160	0.001	0.028	0.014	0.797	0.662	-0.036
	2008	0.197	0.004	0.038	0.015	0.746	0.597	-0.065
	2009	0.258	0.015	0.047	0.017	0.663	0.509	-0.088
	2010	0.305	0.006	0.147	0.018	0.524	0.390	-0.119

Finally, each of the three tuition dependence measures was statistically significant. A one percent increase in the percentage of total revenue from tuition in the one, two, and three years prior resulted in year-over-year revenue per student increases of 1.94 percent, 0.24 percent, and 0.32 percent, respectively. Many institutions in the sample shifted tuition dependence by more than 5 or even 10 percent in a single year. Such shifts signal significant effects on year-over-year changes in total revenue per FTE student. Although other research documents the consequences of tuition dependence on some educational outcomes, increasing tuition dependence in challenging economic periods was shown to stabilize institutional finances. In sum, the model suggests that total revenue per student was improved when institutions diversified away from their primary source, but did so with a close eye on shifts away from or towards tuition revenue, typically the most stable of the five sources.

Results of Specific Hypotheses

Hypothesis 1 predicted that diversification indices would be negatively related to the change in total revenue per student. Hypothesis 2 predicted that tuition dependence measures would be positively related to the change in total revenue per student. Diversification indices for the one and two years prior were significant and inversely predictive of changes in total revenue per student. Each tuition dependence measure was individually significant and positively predictive of changes in total revenue per student. Based on these results, hypothesis 1 and 2 were both supported.

DISCUSSION AND CONCLUSION

This section provides commentary on the results and centers on two categories: external environmental factors and internal revenue diversification. Following the discussion of the results, the implications for practice and the study's limitations are presented. Finally, opportunities for future research will be discussed.

External Environmental Factors

The study utilized four environmental variables in order to account for changes in the institutional context that, according to theory and prior research literature, may affect the outcome variables under examination. The most significant policy variable was undoubtedly the state's average non-need-based grant as a percentage of average public tuition. This measure, coupled with the related need-based grant measure, provides a sense of how individual state financing policies support students.

Legislators have two main alternatives when funding higher education in their states. Historically, the method they have employed most often is to provide state appropriations directly to publicly-controlled institutions. Often referred to as the low-tuition, low-aid model, public institutions charged relatively little in tuition and fees but the amount of additional financial aid provided to students was minimal. Indirect subsidies were provided to all students enrolled at public institutions, even those who did not need financial assistance; but, students who chose private institutions were effectively left out of the subsidization pool.

Alternatively, states can provide lower appropriations to public institutions and instead provide a greater amount of direct aid to students, either based on need or non-need. States allow these funds to be utilized at the accredited college or university selected by the student, even if the institution is privately-controlled. Although existing research has documented the challenges of the high-tuition, high-aid model for low-income and minority students, the present study suggests that the latter approach is the most beneficial for private institutions. The study also revealed the significant consequences of the recent reductions in merit-based aid upon private universities. Of all variables in the study, it could easily be argued that state non-need-based aid is most significant to the total revenue per student of private universities.

Merit-based funding varies significantly across states but has not had a strong track record of late. Budget shortfalls and shifting policy priorities resulted in significant declines in 2010 when only four states increased the measure (none by greater than one percent) and 33 states decreased the measure (ten by more than one percent). Table 7 displays the three-year trend in the average non-need grant as a percentage of average public tuition for the ten states with the most generous proportions of non-need aid. Table 8 provides the estimated consequences of the 2010 reduction in this measure to private institutions in the ten states with the most generous proportions of non-need aid. The calculation is made by multiplying each state's change in the non-need grant measure from 2009 to 2010 by the regression effect found in the model.

Table 7. Average Non-need-based Grant as a Percentage of Average Public Tuition, Top 10 States

State	2008	2009	2010
Georgia	54.65	54.11	49.70
Florida	23.91	23.68	18.14
Louisiana	18.58	18.70	17.32
Tennessee	17.26	18.17	17.09
South Carolina	18.06	16.96	15.28
New Mexico	13.69	14.51	12.70
West Virginia	12.87	13.67	12.32
Nevada	12.11	11.79	9.24
Kentucky	8.56	8.10	7.31
North Carolina	4.11	4.13	3.50
Sample Average	4.05	4.02	3.49

Table 8 - Estimated Effects of the 2010 Reduction in the Average Non-need-based Grant as a Percentage of Average Public Tuition, Top 10 States

State	Total Revenue per FTE student
Georgia	-5.5%
Florida	-6.9%
Louisiana	-1.7%
Tennessee	-1.3%
South Carolina	-2.1%
New Mexico	-2.3%
West Virginia	-1.7%
Nevada	-3.2%
Kentucky	-1.0%
North Carolina	-0.8%
Sample Average	-0.7%

If the percentages above were applied to the each state's average revenue per student in 2010, it is estimated that the average private institution in Georgia and Florida would experience, on average, $1,281 and $1,477 less revenue per FTE student in 2010. The study reveals that non-need-based financial aid was one area used by many state legislators to balance state budgets during economically challenging times. Although these programs were shown to have significant benefits to private universities, prioritizing such programs in economically challenging times may prove politically troublesome when competing demands for public funding are deemed to be more pressing. Nevertheless, the study provides firm support for private institutions and related consortia that lobby state legislatures to expand non-need-based financial aid programs.

Internal Revenue Diversification

Both the diversification indices and tuition dependence measures had significant effects. As institutional revenue became more diversified, total revenue per FTE student increased. At the same time, the tuition dependence measures suggested that institutions solidified their revenue during economically challenging periods as they increased the relative proportion that was derived from tuition. To aid in interpretation of the results, the 2006-2010 revenue distributions and diversification indices for a hypothetical private institution (ABC University) are displayed in Table 9.

Table 9. Revenue Diversification at ABC University

	Components of Total Revenue by Percentage					
Year	Tuition	Governmental	Private	Endowment Income	Auxliary & Affiliate	Diversification Index
2006	0.200	0.100	0.500	0.000	0.200	0.340
2007	0.230	0.100	0.440	0.010	0.220	0.305
2008	0.260	0.100	0.380	0.020	0.240	0.280
2009	0.290	0.100	0.320	0.030	0.260	0.265
2010	0.320	0.100	0.260	0.040	0.280	0.260

In this illustration, ABC University increased its revenue diversification by reducing its dependence upon revenue from private sources by 6 percent each year. In its place, the University increased the components of total revenue from endowment income (1 percent per year), auxiliary/affiliate (2 percent per year), and tuition (3 percent per year). As a result, the institution's diversification index declined from 0.340 to 0.260 over the five year period.

If one were to use the model to predict the effect of ABC University's diversification on 2010 revenue per student, the model's coefficients for one, two, and three years prior would be applied to changes in ABC's diversification indices and tuition dependence measures for 2009, 2008, and 2007, respectively. Table 10 applies the results of the model to variations in these predictors to estimate the effect of such changes on total revenue per student.

Table 10. Estimated Effect of Revenue Diversification upon 2010 Revenue per Student at ABC University

	Diversification Indices			Tuition Dependence Measures		
Period	Change	Coefficient*	Effect	Change	Coefficient**	Effect
1 Year Prior	-0.015	-8.829	0.013	0.03	1.938	0.058
2 Years Prior	-0.025	-3.020	0.008	0.03	0.244	0.007
3 Years Prior		Statistically Insignificant		0.03	0.321	0.010
			0.021			0.075
Cumulative	0.096	or	9.6%			

* For each 0.1 increase in the diversification index
** For each 1.0 percent increase in the tuition dependence measure

By becoming more diversified and increasing tuition dependence in each year, ABC University is estimated to have experienced an additional 9.6 percent increase in total revenue per FTE student in 2010 than had the University consistently maintained its more concentrated revenue structure in the base year of 2006. The impact of such an effect on university funding is sizeable. For sampled institutions, 2010 revenue per FTE student was $25,900 while average FTE enrollment was 2,580. A 9.6 percent increase represents an additional $2,486 in revenue per student, yielding an increase in total revenue of approximately $6.4 million. Because

many of the institutions in the sample are small and operate on very thin margins, the capture of such revenue could mean the difference between survival and cessation during tough economic periods.

Implications for Future Practice

A number of findings from this study are useful for informing both administrative practice and public policy. First, the significance of state non-need-based financial aid was revealed. Private institutions and related consortia should embrace the shift toward privatization and student choice and actively lobby for the expansion of such approaches to funding. Unfortunately, sizeable non-need-based aid programs are still uncommon. In 2010, thirty-three states provided less than one percent of the public tuition cost in non-need-based aid. Thirteen states provided no non-need-based aid.

To promote such public policy, private institutions should regularly advance arguments – supported by empirical studies – regarding the effectiveness of such non-need-based aid programs in reducing demand on public universities, promoting social mobility, and serving as economically-wise public investments. Documenting the success of non-need-based aid programs in states like Florida, Georgia, and Tennessee may also prove to be an effective policy lever. Likewise, private institutions should promote stringent accreditation policies ensuring that institutions not effectively serving students or the public interest are disqualified from receiving such funding. A perception of the relative increase in inferior and often predatory for-profit institutions, as well as the low career placement and high loan default rates of their graduates (and dropouts), has been cited as one reason for cautious financial aid policies at the state and federal levels. Although this presents a tall order during troubling economic times, the benefits of state financial aid, and non-need-based aid in particular, for private universities are significant.

Second, the study provides tactical insights to private university stakeholders regarding strategic financing in economically challenging periods. Institutions that diversified their revenue portfolios experienced, on average, greater increases in revenue per student. Administrators should continually evaluate the concentration of institutional revenue and address excessive reliance upon any one source. For example, sampled institutions that historically drew a high proportion of annual revenue from private sources placed themselves in peril when economic conditions become dire. In 2006, 29 institutions in the study relied upon private sources for over forty percent of their annual revenue. As market conditions became dire in 2009, each institution experienced a decline in the proportion of total revenue provided by these private sources. The proportion of total revenue provided by private sources at these institutions declined by an average of 23.3 percent from 2006 to 2009. In 2009, only 4 of the 29 institutions still drew 40 percent or more of their revenue from private sources. It could be suggested that these institutions anticipated such conditions and intentionally diversified in order to solidify their financing. However, 21 of these 29 institutions experienced a decline in inflation-adjusted revenue per FTE student across the three-year period. In constant dollars, the average revenue per student at these institutions declined 23.5 percent from $37,570 in 2006 to $28,754 in 2009.

Finally, keeping in mind student affordability, administrators must understand the unique nature of tuition for promoting institutional fiscal health. The study suggests that increasing reliance upon tuition dollars provides greater stability in securing funding during financially troubling times. Reducing reliance upon dominant sources of revenue and solidifying enrollment so as to increase tuition revenue may thus be the key strategic combination that could enable many private institutions to survive – and even thrive – during challenging economic periods.

Study Limitations

While this study has filled a gap in the literature regarding revenue diversification and institutional financing, it is not without its limitations. A first potential shortcoming arises due to the time period under study. Observations were intentionally derived from the years 2008-2010, the three worst economic years in recent memory. The analysis of these years was an intelligible choice given the grave financial difficulty that many private institutions faced and the historic challenges to traditional revenue sources. Consequently, results

should be interpreted within the economic context in which they occurred. Institutions shifting revenue structures during peak market years may experience differing results.

A second limitation in the study is the limited testing of potential time-sensitive relationships between variables. Diversification indices and tuition dependence measures in the one, two, and three years prior to observation served as predictors. Policy and context variables were those of the observation year. It is possible that shifts in revenue diversification four or more years prior would have had significant effects on the study's outcome. Limitations on the availability of historic endowment values precluded inclusion of these measures. Likewise, changes in the external environment may have a lag effect on institutional revenue.

Finally, the study was limited to institutions classified as private Bachelor's and Master's institutions per Carnegie classification. A similar study could be conducted on public institutions or more complex research universities with similar or differing results. Generalizations of these results to dissimilar institutions such as community colleges or tier-1 research universities is discouraged. Likewise, although the institutions in the study are primarily teaching focused, significant variation exists within institutions in terms of size, wealth, selectivity, and complexity. More precise results may be found if the models are analyzed exclusively for the most elite liberal arts colleges, or for less selective institutions with far fewer financial resources.

Opportunities for Future Research

This paper revealed that revenue diversification increased total revenue per FTE student at sampled institutions during the worst years of the Great Recession, a finding consistent with portfolio theory as described. An additional diversification rationale previously examined, resource dependence theory, argues that a more diversified revenue stream will reduce goal displacement and allow an institution to be more faithful to its mission. To determine whether this is an empirically supported position, a companion article will examine how revenue diversification affects institutional mission (which, in the current population, is predominately teaching) through its effects on supply-side outcomes such as instructional expenditures and faculty headcount.

The next intuitive area of study concerns analysis of outcomes over a longer period of time, including periods in which economic markets were favorable. This study and its companion intentionally focused on three years in which the United States faced historically poor economic conditions. Analysis over a similarly lengthy period of economic expansion would be a good comparison study. Each of the traditional revenue sources likely respond differently in peak economic times. Contrary to what occurred in 2008-2010, in a growing economy, charitable giving and endowment income may well increase while tuition revenue may decrease as increased employment opportunities raise the opportunity cost of additional years of education. Analysis over a longer period of time, such as an entire decade, would most likely include both bull and bear markets and could provide insights that would enable administrators to develop long-term financing strategies.

Third, further examination of the relationships between variables in the study across time may provide additional significant findings. The model was analyzed using environmental variables in the year of observation, revenue diversification indices in the three prior years, and tuition dependence measures in the three prior years. It is highly likely that policy and context variables in preceding years could have significant effects on the study's outcome. For example, state need-based and non-need-based grant measures in 2008 could have positive effects on 2010 revenue per FTE student. As additional longitudinal data becomes available, such a study could be effectively conducted. Significant findings from such an analysis would aid in understanding the long-term implications of prior periods' economic, public policy, and institutional revenue changes beyond those identified in the present study.

A fourth area of further study would examine revenue diversification in other sectors of higher education. The distribution of revenue at two-year community colleges, publicly-funded four-year universities, and research universities frequently differs from those of private Bachelor's and Master's institutions in the present study. Government funding, which has experienced significant challenges in recent years, typically represents a much greater component of total revenue for the former institutions. Additionally, research universities often have significant sources of revenue from grant funding, athletics, and auxiliary operations such as hospitals and

business ventures. The effects of revenue diversification may differ significantly at these institutions. A focused study on any of these sectors could fill this knowledge gap.

Finally, should extensive research be conducted and all the benefits and shortcomings of revenue diversification be discovered, additional administrative knowledge is still needed regarding how to diversify. For example, what timeline should institutions develop for effectively rolling out a diversification initiative? What are the specific auxiliary revenue sources that are most effective for various types of institutions? What staffing requirements are necessary in order to meet the regulatory requirements arising from a restructured revenue portfolio? A qualitative study of 5-10 institutions that have recently undergone a successful diversification initiative could go a long ways towards providing a template for college and university administrators seeking to solidify their operations through revenue diversification.

CONCLUSION

This study explored the effects of revenue diversification upon a critical financial metric of private Bachelor's and Master's universities during the most challenging economic period in recent history. Utilizing empirical research and theoretical lenses from both the management and higher education disciplines, historical measures of revenue diversification and tuition dependence were identified as possible predictors for the year-over-year change in revenue per student. The results indicated that revenue diversification is an effective strategy for solidifying institutional revenue. Additionally, the importance of non-need-based aid was discovered. As colleges and universities continue to seek new revenue sources and external stakeholders continue to demand greater accountability, additional research in this area will provide the necessary knowledge allowing policy-makers and administrators to strategically structure higher education financing so as to meet the needs of diverse stakeholders and to allow individual institutions to meet their specific, mission-related objectives.

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Appendix A - Trend Data for Major Revenue Sources, by Carnegie Classification (1987-2010 in 2010 dollars)

Revenues per FTE Student

Revenue per FTE student (1987-2010 in 2010 dollars)

Public Associate's

Revenue per FTE student	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average	1-year	5-year	10-year	20-year	From Average
Net tuition	$1,694	$1,678	$1,850	$1,991	$1,720	$1,937	$2,036	$2,067	$2,171	$2,156	$2,120	$2,126	$2,180	$2,226	$2,182	$2,410	$2,393	$2,729	$2,853	$2,924	$3,011	$3,027	$3,137	$3,270	$2,315	$184	$412	$953	$1,579	$952
State/local appropriations	$6,871	$6,709	$6,663	$6,754	$6,341	$5,983	$5,926	$5,941	$6,120	$6,293	$6,370	$6,656	$6,924	$6,892	$6,943	$6,846	$6,255	$6,156	$6,207	$6,662	$6,910	$7,186	$6,698	$5,709	$6,481	($996)	($508)	($1,192)	($1,035)	($791)
Federal appropriations, grants, and contracts	$1,033	$989	$1,019	$1,087	$1,015	$1,014	$1,003	$1,134	$1,203	$1,396	$1,289	$1,420	$1,551	$1,594	$1,718	$1,722	$1,835	$2,049	$1,723	$1,779	$1,837	$1,892	$1,948	$1,818	$1,659	($138)	$91	$224	$721	$359
Auxiliary enterprises, hospitals, and other sources	$1,141	$1,165	$1,226	$1,146	$1,091	$1,077	$1,046	$1,071	$1,124	$1,116	$1,121	$1,166	$1,241	$1,286	$1,333	$1,442	$1,329	$1,359	$1,353	$1,272	$1,271	$1,322	$1,271	$1,230	$1,215	$59	$75	$43	$165	$113
Gifts, investment returns, and endowment income	$112	$111	$122	$133	$123	$128	$133	$152	$161	$150	$187	$191	$218	$218	$209	$192	$167	$227	$196	$187	$283	$170	$152	$147	$170	($50)	$19	($39)	($70)	($29)
Total Revenue ($)	**$10,741**	**$10,546**	**$10,623**	**$10,791**	**$10,272**	**$9,982**	**$10,071**	**$10,317**	**$10,674**	**$11,076**	**$11,052**	**$11,667**	**$12,229**	**$12,303**	**$12,543**	**$12,425**	**$12,183**	**$12,827**	**$12,774**	**$12,928**	**$13,449**	**$13,089**	**$13,222**	**$12,270**	**$11,853**	**($991)**	**($3)**	**($32)**	**$1,480**	**$618**
Percentage of Total Revenue	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**Average**	**1-year**	**5-year**	**10-year**	**20-year**	**From Average**
Net tuition	14.9%	15.0%	15.8%	15.7%	16.0%	18.6%	19.8%	19.8%	19.8%	19.1%	18.5%	18.9%	18.9%	18.0%	18.6%	19.0%	21.0%	22.5%	22.8%	22.6%	22.3%	23.1%	23.7%	26.5%	19.9%	2.9%	3.8%	11.0%		6.4%
State/local appropriations	63.9%	63.6%	62.7%	62.4%	61.7%	58.9%	57.9%	57.6%	57.4%	56.7%	57.7%	57.0%	56.6%	56.0%	55.4%	55.5%	51.3%	48.1%	50.6%	51.5%	51.7%	54.9%	50.6%	46.5%	55.6%	-4.5%	-4.1%	-9.6%	-16.0%	-9.5%
Federal appropriations, grants, and contracts	9.6%	9.4%	9.6%	10.1%	9.9%	10.2%	10.0%	11.0%	11.3%	12.6%	11.7%	12.2%	12.7%	13.0%	13.7%	13.9%	15.1%	16.0%	13.5%	13.8%	13.7%	14.5%	14.7%	14.8%	12.5%	0.1%	0.7%	1.9%	4.7%	2.3%
Auxiliary enterprises, hospitals, and other sources	10.6%	11.0%	11.6%	10.6%	10.6%	10.8%	10.3%	10.4%	10.5%	10.1%	10.1%	10.2%	10.1%	10.5%	10.6%	11.6%	10.9%	10.6%	10.6%	9.8%	9.4%	9.7%	9.6%	10.0%	10.4%	1.2%	0.6%	0.4%	0.2%	0.4%
Gifts, investment returns, and endowment income	1.0%	1.1%	1.2%	1.2%	1.2%	1.3%	1.3%	1.4%	1.5%	1.4%	1.5%	1.6%	1.8%	1.8%	1.7%	1.5%	1.4%	1.8%	1.5%	1.4%	2.1%	1.3%	1.2%	1.2%	1.6%	0.6%	0.6%	0.4%	0.2%	-0.2%
Total Revenue (%)	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Public Bachelor's

Revenue per FTE student	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average	1-year	5-year	10-year	20-year	From Average
Net tuition	$2,437	$2,479	$2,503	$2,832	$2,985	$3,146	$3,452	$3,612	$3,702	$3,825	$3,928	$4,086	$4,116	$4,128	$4,194	$4,277	$4,608	$5,110	$5,381	$5,515	$5,641	$5,740	$5,975	$6,369	$4,199	$395	$988	$2,245	$3,436	$2,171
State/local appropriations	$8,058	$8,075	$7,990	$7,862	$7,682	$6,786	$6,507	$6,599	$6,775	$6,731	$6,824	$7,148	$7,453	$7,643	$7,743	$7,945	$6,997	$6,669	$6,641	$6,637	$6,829	$7,065	$6,679	$5,859	$7,066	($620)	($1,162)	($1,804)	($1,804)	($1,207)
Federal appropriations, grants, and contracts	$1,005	$944	$981	$996	$969	$1,005	$1,002	$1,178	$1,292	$1,608	$1,525	$1,426	$1,513	$1,646	$1,754	$1,922	$1,943	$1,985	$1,919	$1,992	$2,016	$2,065	$1,999	$2,162	$1,526	$173	$342	$578	$1,168	$636
Auxiliary enterprises, hospitals, and other sources	$2,598	$2,523	$2,563	$2,582	$2,543	$2,566	$2,621	$2,673	$2,750	$2,842	$2,878	$2,907	$3,044	$3,209	$3,164	$3,215	$3,151	$3,195	$3,289	$3,231	$3,351	$3,396	$3,378	$3,334	$2,990	$139	$388	$483	$1,151	$743
Gifts, investment returns, and endowment income	$211	$240	$264	$262	$275	$295	$300	$307	$347	$349	$373	$363	$412	$405	$305	$346	$318	$327	$363	$400	$420	$447	$275	$362	$317	$47	($1)	($99)	$130	$5
Total Revenue ($)	**$14,583**	**$14,513**	**$14,501**	**$14,384**	**$13,748**	**$13,779**	**$13,962**	**$14,369**	**$14,860**	**$15,356**	**$15,529**	**$15,998**	**$16,541**	**$17,122**	**$17,353**	**$17,308**	**$17,035**	**$17,285**	**$17,473**	**$17,831**	**$18,457**	**$18,670**	**$18,293**	**$18,486**	**$16,138**	**$193**	**$1,012**	**$1,364**	**$4,101**	**$2,347**
Percentage of Total Revenues	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**Average**	**1-year**	**5-year**	**10-year**	**20-year**	**From Average**
Net tuition	16.7%	17.0%	17.3%	17.7%	17.7%	18.7%	20.8%	21.9%	22.6%	22.1%	22.3%	21.9%	21.4%	21.3%	21.0%	20.3%	21.1%	23.2%	23.6%	24.8%	27.1%	24.1%	26.6%	28.1%	29.5%	22.7%	1.4%	2.7%	4.3%	11.4%	6.8%
State/local appropriations	55.4%	55.7%	54.3%	54.9%	52.3%	48.3%	47.8%	46.7%	46.0%	45.5%	46.3%	46.7%	46.6%	46.5%	45.8%	46.5%	41.0%	39.1%	37.9%	38.1%	38.0%	39.4%	38.3%	33.4%	44.8%	-4.9%	-4.6%	-13.5%	-20.0%	-11.8%
Federal appropriations, grants, and contracts	6.7%	6.1%	6.5%	6.7%	7.0%	7.3%	7.0%	8.0%	8.7%	10.5%	9.8%	8.9%	9.1%	9.6%	10.1%	11.1%	11.4%	11.5%	11.0%	11.2%	10.9%	11.1%	10.9%	11.7%	9.5%	0.8%	0.7%	2.4%	4.0%	2.2%
Auxiliary enterprises, hospitals, and other sources	17.8%	17.4%	17.6%	18.0%	18.6%	18.5%	18.8%	18.6%	18.5%	18.5%	18.8%	18.2%	18.4%	18.7%	18.2%	18.6%	18.5%	18.5%	18.8%	18.1%	18.2%	18.2%	18.5%	18.0%	18.5%	0.6%	0.9%	1.9%	2.2%	1.7%
Gifts, investment returns, and endowment income	1.5%	1.7%	1.8%	1.8%	2.0%	2.1%	2.1%	2.1%	2.3%	2.3%	2.4%	2.3%	2.5%	2.4%	1.7%	2.0%	1.9%	1.9%	2.1%	2.2%	2.3%	2.4%	1.5%	2.0%	2.0%	-0.7%	0.1%	-0.7%	0.1%	-0.3%
Total Revenue (%)	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Public Master's

Revenue per FTE student	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average	1-year	5-year	10-year	20-year	From Average
Net tuition	$3,624	$3,768	$3,834	$3,921	$3,984	$4,111	$4,395	$4,817	$4,929	$5,032	$5,152	$5,261	$5,396	$5,455	$5,497	$5,728	$6,120	$6,687	$7,046	$7,547	$7,552	$7,715	$8,081	$8,586	$5,907	$502	$1,498	$3,131	$4,665	
State/local appropriations	$11,131	$11,310	$11,181	$10,970	$10,390	$9,938	$9,646	$9,692	$9,969	$9,788	$9,903	$10,154	$10,506	$10,689	$10,944	$10,681	$9,657	$9,148	$9,093	$9,166	$9,197	$9,772	$9,054	$8,132	$10,006	($872)	($879)	($2,156)	($2,856)	($1,874)
Federal appropriations, grants, and contracts	$1,477	$1,508	$1,736	$1,838	$1,843	$4,024	$4,248	$4,446	$4,633	$5,172	$4,739	$4,776	$4,976	$5,256	$5,504	$5,586	$5,492	$5,775	$6,077	$6,047	$6,014	$5,939	$6,126	$6,206	$5,123	$211	$313	$1,133	$4,551	$2,488
Auxiliary enterprises, hospitals, and other sources	$4,472	$3,160	$3,409	$3,630	$3,789	$4,194	$4,313	$4,411	$4,613	$4,695	$4,690	$4,687	$4,751	$4,906	$4,887	$4,752	$4,705	$4,906	$5,230	$5,330	$5,182	$5,352	$5,374	$5,050	$5,118	$1,173	$1,468	$3,398	$5,296	$2,511
Gifts, investment returns, and endowment income	$1,281	$1,344	$1,442	$1,557	$1,545	$1,622	$1,673	$1,682	$1,707	$1,791	$1,959	$2,091	$2,211	$2,366	$2,541	$1,329	$2,001	$2,107	$2,212	$2,402	$3,355	$1,980	$4,899	$2,307	$1,823	$2,678	$95	($559)	$749	$494
Total Revenue ($)	**$26,612**	**$27,166**	**$27,653**	**$27,510**	**$27,521**	**$28,000**	**$28,371**	**$29,050**	**$29,860**	**$30,284**	**$30,420**	**$31,199**	**$32,130**	**$32,973**	**$33,829**	**$33,074**	**$34,212**	**$35,118**	**$36,216**	**$37,137**	**$38,809**	**$37,751**	**$36,022**	**$34,886**	**$32,117**	**$2,861**	**$2,678**	**$5,910**	**$10,974**	**$6,766**
Percentage of Total Revenues	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**Average**	**1-year**	**5-year**	**10-year**	**20-year**	**From Average**
Net tuition	13.7%	13.9%	13.9%	14.3%	14.5%	14.7%	15.5%	16.6%	16.5%	16.6%	16.9%	16.9%	16.8%	16.5%	16.3%	17.3%	17.9%	19.0%	19.6%	19.8%	19.4%	20.4%	22.4%	22.1%	17.3%	-0.4%	2.5%	5.3%	4.0%	4.6%
State/local appropriations	42.2%	41.6%	40.4%	39.8%	37.9%	32.3%	34.0%	33.4%	32.4%	32.4%	32.7%	32.7%	32.4%	32.1%	32.0%	29.2%	26.7%	24.9%	24.9%	24.7%	23.8%	24.9%	25.1%	23.8%	30.1%	-5.9%	-4.0%	-11.5%	-19.4%	-10.2%
Federal appropriations, grants, and contracts	13.2%	13.2%	13.5%	13.8%	14.9%	14.4%	14.9%	15.3%	15.6%	17.1%	15.6%	15.3%	15.5%	15.9%	16.3%	21.9%	21.4%	22.5%	22.3%	21.7%	20.6%	21.1%	22.7%	21.6%	17.8%	-1.1%	-0.7%	3.6%	7.8%	3.8%
Auxiliary enterprises, hospitals, and other sources	20.0%	20.4%	27.9%	27.3%	28.2%	28.9%	28.8%	28.9%	28.0%	28.0%	28.8%	28.7%	28.0%	27.7%	27.7%	27.1%	28.1%	27.7%	27.1%	27.1%	28.7%	28.4%	31.0%	28.3%	27.9%	-1.5%	2.4%	1.5%	2.2%	1.6%
Gifts, investment returns, and endowment income	4.8%	4.9%	5.2%	5.6%	5.6%	5.8%	5.9%	5.8%	5.7%	5.9%	6.4%	6.7%	6.9%	7.2%	7.5%	3.9%	5.9%	6.0%	6.1%	6.5%	8.6%	5.2%	13.6%	8.9%	5.7%	7.0%	0.2%	1.7%	0.8%	0.1%
Total Revenue (%)	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Source: Delta Cost Project (IPEDS database, 24-year matched set

Private Bachelor's

Revenue per FTE student	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average	1-year	5-year	10-year	20-year	From Average
Net tuition	$9,107	$9,122	$9,477	$9,723	$9,850	$10,094	$10,158	$10,374	$10,534	$10,690	$10,667	$10,972	$11,328	$11,673	$11,849	$12,205	$12,421	$12,825	$13,099	$13,504	$13,915	$14,210	$14,479	$13,491	$11,981	$1,331	$2,458	$4,751		$2,988
State/local appropriations	$651	$766	$649	$577	$579	$395	$364	$398	$472	$319	$554	$510	$502	$412	$402	$332	$462	$563	$533	$443	$457	$550	$572	$479	$495	($84)	$106	$27	($138)	($46)
Federal appropriations, grants, and contracts	$3,703	$3,278	$3,357	$3,372	$3,201	$3,719	$3,528	$3,547	$3,618	$3,571	$3,333	$3,445	$3,434	$3,448	$3,538	$3,536	$3,547	$3,438	$3,398	$3,422	$3,285	$3,175	$3,223	$3,477	$3,431	$55	($212)	($167)	($95)	($133)
Auxiliary enterprises, hospitals, and other sources	$3,508	$3,487	$3,457	$3,503	$3,390	$3,641	$3,451	$3,440	$3,518	$3,518	$3,549	$3,715	$3,795	$4,251	$4,683	$4,697	$4,637	$4,675	$4,729	$4,786	$4,829	$4,729	$4,705	$4,588	$4,167	$249	$242	$389	$1,009	$580
Gifts, investment returns, and endowment income	$5,161	$5,299	$5,081	$4,998	$4,844	$4,711	$4,704	$4,633	$5,447	$4,868	$8,215	$10,995	$7,772	$6,148	$3,990	$7,552	$5,017	$12,447	$14,024	$10,780	$5,732	$8,726	$12,046	$6,557	$8,255	($1,451)	($3,225)	$7,048	$3,489	
Total Revenue ($)	**$21,756**	**$21,699**	**$22,066**	**$22,174**	**$22,040**	**$22,355**	**$22,201**	**$22,430**	**$23,317**	**$23,033**	**$24,968**	**$26,886**	**$23,643**	**$27,882**	**$26,460**	**$28,279**	**$26,041**	**$34,333**	**$35,569**	**$42,404**	**$27,702**	**$33,650**	**$34,754**	**$27,854**	**$21,099**	**$1,221**	**($2,318)**	**$12,046**		**$6,900**
Percentage of Total Revenues	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**Average**	**1-year**	**5-year**	**10-year**	**20-year**	**From Average**
Net tuition	41.9%	42.0%	42.9%	43.9%	44.7%	45.5%	45.7%	45.8%	45.9%	44.8%	38.1%	38.7%	34.3%	31.4%	43.3%	38.3%	44.3%	35.3%	39.1%	31.2%	52.1%	38.2%	39.0%	41.7%	41.3%	63.3%	7.8%	16.2%	-2.7%	0.4%
State/local appropriations	3.0%	3.5%	3.2%	2.6%	2.6%	1.8%	1.7%	1.7%	2.1%	1.5%	1.6%	1.4%	2.2%	1.5%	1.5%	1.2%	1.8%	1.6%	1.5%	1.0%	1.6%	1.6%	1.6%	1.8%	1.6%	6.8%	0.5%	0.3%	-1.9%	-0.6%
Federal appropriations, grants, and contracts	17.0%	15.1%	15.2%	15.2%	14.5%	16.6%	15.9%	15.8%	15.5%	15.5%	13.3%	12.8%	14.5%	12.4%	13.4%	12.5%	13.6%	10.0%	9.6%	8.1%	11.9%	9.4%	8.6%	12.5%	16.3%	4.5%	-10.2%	-1.4%	-1.4%	-1.4%
Auxiliary enterprises, hospitals, and other sources	16.1%	16.1%	15.7%	15.8%	15.4%	16.3%	15.5%	15.3%	15.1%	15.3%	14.2%	13.8%	16.1%	15.2%	17.7%	16.6%	17.8%	13.6%	13.3%	11.3%	17.4%	14.1%	13.5%	16.5%	19.8%	20.4%	10.4%	3.2%	-2.3%	-2.8%
Gifts, investment returns, and endowment income	23.7%	24.4%	23.0%	22.5%	22.0%	21.1%	21.2%	20.6%	23.4%	21.1%	32.9%	40.9%	32.9%	22.1%	15.1%	26.7%	19.3%	36.2%	39.4%	25.4%	20.7%	25.9%	34.7%	23.5%	12.8%	-118.8%	139.2%	58.5%	13.1%	3.9%
Total Revenue (%)	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Private Master's

Revenue per FTE student	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average	1-year	5-year	10-year	20-year	From Average
Net tuition	$9,049	$9,262	$9,570	$9,775	$9,984	$10,289	$10,980	$10,919	$11,079	$11,284	$11,457	$11,496	$11,992	$12,295	$12,421	$12,825	$13,009	$13,504	$13,886	$13,918	$14,215	$14,379	$14,901	$13,699	$11,979	$748	$1,742	$2,804	$5,158	$3,180
State/local appropriations	$609	$486	$666	$647	$629	$458	$409	$422	$370	$416	$636	$489	$447	$357	$343	$458	$429	$426	$413	$378	$399	$360	$359	$289	$475	($74)	($122)	($249)	($359)	($198)
Federal appropriations, grants, and contracts	$1,083	$1,009	$1,078	$1,115	$1,092	$1,306	$1,222	$1,298	$1,497	$1,529	$1,054	$1,036	$1,045	$989	$1,079	$1,185	$1,095	$1,077	$986	$999	$993	$1,086	$1,141	($981)	($302)	($230)	($189)	
Auxiliary enterprises, hospitals, and other sources	$3,390	$3,427	$3,281	$3,390	$3,662	$3,658	$3,562	$3,678	$3,307	$3,345	$3,592	$3,650	$3,669	$3,454	$3,389	$3,912	$3,686	$3,984	$3,957	$4,170	$4,386	$4,926	$4,692	$4,813	$3,825	($351)	$74	$171	$299	$200
Gifts, investment returns, and endowment income	$2,621	$2,478	$2,357	$2,192	$2,186	$2,019	$1,866	$1,980	$1,949	$2,089	$3,498	$6,086	$3,168	$5,579	$3,117	$2,117	$2,993	$4,788	$4,226	$6,579	$3,925	$2,360	$5,193	$3,134	$3,178	$4,837	($690)	($2,963)	$1,343	$576
Total Revenue ($)	**$17,864**	**$17,271**	**$17,499**	**$17,807**	**$17,472**	**$17,730**	**$17,407**	**$18,201**	**$18,407**	**$18,673**	**$22,118**	**$23,082**	**$21,317**	**$23,268**	**$20,451**	**$20,499**	**$21,425**	**$24,978**	**$23,087**	**$26,044**	**$25,866**	**$27,217**	**$30,832**	**$26,764**	**$23,997**	**$26,544**	**$4,975**	**$529**	**$698**	**$4,128**	**$3,263**
Percentage of Total Revenues	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**Average**	**1-year**	**5-year**	**10-year**	**20-year**	**From Average**
Net tuition	50.1%	53.5%	54.7%	54.9%	57.1%	58.1%	59.9%	59.9%	59.6%	59.8%	51.8%	51.5%	52.7%	52.8%	59.3%	62.6%	61.0%	57.0%	59.6%	53.4%	54.7%	52.8%	53.4%	58.7%	53.4%	58.7%	13.4%	6.3%	10.5%	7.5%	5.1%
State/local appropriations	3.3%	2.8%	3.8%	3.7%	3.6%	2.5%	2.3%	2.3%	2.0%	2.2%	2.9%	2.1%	2.1%	1.5%	1.7%	2.2%	2.0%	1.8%	1.8%	1.4%	1.6%	1.3%	1.2%	1.2%	2.3%	-9.7%	-0.6%	-1.3%	-2.3%	-1.1%
Federal appropriations, grants, and contracts	6.1%	5.8%	6.2%	6.4%	6.3%	7.4%	7.1%	6.8%	7.0%	6.6%	4.8%	4.5%	4.7%	4.3%	5.2%	5.8%	5.1%	4.3%	4.2%	3.8%	3.8%	4.0%	3.7%	4.4%	4.8%	7.7%	0.5%	0.4%	-0.5%	0.3%
Auxiliary enterprises, hospitals, and other sources	21.9%	22.2%	21.6%	21.5%	21.0%	20.6%	20.5%	20.2%	18.0%	17.9%	15.8%	15.8%	17.2%	14.8%	16.6%	19.1%	17.2%	16.0%	17.1%	16.0%	17.0%	18.1%	15.2%	18.0%	16.0%	-4.5%	0.1%	0.4%	-0.9%	-0.4%
Gifts, investment returns, and endowment income	14.7%	14.3%	13.5%	12.3%	12.5%	11.4%	10.7%	10.9%	10.6%	11.2%	15.8%	26.4%	14.9%	24.0%	15.2%	10.3%	14.0%	19.2%	18.3%	25.3%	15.2%	8.7%	16.8%	11.7%	13.3%	8.2%	-2.7%	-7.2%	5.6%	1.7%
Total Revenue (%)	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Private Research

Revenue per FTE student	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Average	1-year	5-year	10-year	20-year	From Average
Net tuition	$13,397	$13,591	$13,961	$14,318	$14,475	$15,205	$15,278	$15,490	$15,773	$16,037	$16,051	$16,616	$17,045	$17,545	$17,243	$18,229	$18,555	$18,830	$19,338	$19,365	$20,049	$20,342	$20,830	$20,799	$17,201	$161	$1,481	$3,254	$6,441	$3,769
State/local appropriations	$1,031	$1,010	$980	$1,015	$978	$747	$742	$825	$880	$886	$1,020	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	($85)	($87)	($110)	($333)	($96)
Federal appropriations, grants, and contracts	$5,256	$5,732	$5,812	$5,347	$5,730	$5,993	$6,145	$6,309	$6,598	$6,566	$6,646	$6,932	$6,268	$6,443	$6,716	$6,660	$6,483	$6,483	$6,483	$6,483	$6,483	$6,483	$6,483	$6,483	$6,483	$6,483	$6,483	$6,483	$6,483	$6,483
Auxiliary enterprises, hospitals, and other sources	$4,514	$4,173	$4,316	$4,274	$4,371	$4,861	$4,914	$5,098	$5,148	$5,194	$5,299	$5,394	$5,394	$5,394	$5,394	$5,394	$5,394	$5,394	$5,394	$5,394	$5,394	$5,394	$5,394	$5,394	$5,394	$5,394	$5,394	$5,394	$5,394	$5,394
Gifts, investment returns, and endowment income	$4,963	$5,077	$5,297	$5,534	$5,643	$5,285	$5,845	$5,560	$5,816	$5,987	$5,927	$6,929	$8,728	$6,961	$6,540	$7,426	$6,948	$13,803	$11,301	$11,735	$14,173	$9,242	$10,736	$8,463	$8,116	$1,353	($1,121)	($2,170)	$1,028	$1,721
Total Revenue ($)	**$29,161**	**$29,583**	**$30,366**	**$30,688**	**$31,197**	**$32,091**	**$32,924**	**$33,282**	**$34,215**	**$34,670**	**$34,943**	**$36,871**	**$38,435**	**$39,343**	**$36,893**	**$38,709**	**$38,380**	**$45,510**	**$43,515**	**$44,177**	**$47,099**	**$42,461**	**$44,443**	**$42,139**	**$38,194**	**$13,306**	**$8,750**	**$10,011**	**$19,819**	**$13,291**
Percentage of Total Revenues	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**Average**	**1-year**	**5-year**	**10-year**	**20-year**	**From Average**
Net tuition	45.9%	45.9%	45.9%	46.6%	45.9%	47.4%	46.4%	46.5%	46.1%	46.3%	45.9%	45.1%	44.3%	44.6%	46.7%	47.0%	48.3%	41.4%	44.4%	43.8%	42.6%	47.9%	46.9%	49.4%	45.0%	1.2%	16.9%	32.5%	32.5%	28.3%
State/local appropriations	3.5%	3.4%	3.2%	3.3%	3.1%	2.3%	2.3%	2.5%	2.6%	2.6%	2.9%	2.7%	2.6%	2.5%	2.7%	2.6%	2.6%	2.2%	2.3%	2.2%	2.1%	2.4%	2.3%	2.5%	2.6%	-0.6%	-1.0%	-1.1%	-1.7%	-0.7%
Federal appropriations, grants, and contracts	18.0%	19.4%	19.1%	17.4%	18.4%	18.7%	18.7%	19.0%	19.3%	18.9%	19.0%	18.8%	16.3%	16.4%	18.2%	17.2%	16.9%	14.2%	14.9%	14.7%	13.8%	15.3%	14.6%	15.4%	17.0%	48.7%	74.1%	32.4%	16.3%	48.7%
Auxiliary

Appendix B
Distribution of Predictor Variables by Quintile with Outcome

Diversification Indices

	One Year Prior			Two Years Prior			Three Years Prior		
Observation	Quentile	Index	Revenue Chg.	Quentile	Index	Revenue Chg.	Quentile	Index	Revenue Chg.
2008	1st	0.283	-0.92	1st	0.282	-1.25	1st	0.284	-1.15
	2nd	0.340	0.40	2nd	0.340	-0.50	2nd	0.342	-1.09
	3rd	0.407	-2.98	3rd	0.403	-0.36	3rd	0.406	-0.54
	4th	0.485	-1.14	4th	0.481	-1.55	4th	0.486	-1.08
	5th	0.655	-0.19	5th	0.651	-1.21	5th	0.657	-1.03
	Average	0.434	-0.98	Average	0.431	-0.98	Average	0.435	-0.98
2009	1st	0.284	-2.86	1st	0.283	-1.16	1st	0.282	-1.28
	2nd	0.343	-2.30	2nd	0.340	-2.88	2nd	0.340	-2.30
	3rd	0.411	0.18	3rd	0.407	1.17	3rd	0.403	0.44
	4th	0.492	0.86	4th	0.485	-1.23	4th	0.481	-0.49
	5th	0.663	2.40	5th	0.655	2.38	5th	0.651	1.85
	Average	0.438	-0.37	Average	0.443	-0.37	Average	0.431	-0.37
2010	1st	0.290	1.56	1st	0.284	0.19	1st	0.283	1.43
	2nd	0.357	-2.45	2nd	0.343	0.76	2nd	0.340	-1.35
	3rd	0.433	0.30	3rd	0.411	-0.78	3rd	0.407	-0.48
	4th	0.513	0.26	4th	0.492	0.08	4th	0.485	1.40
	5th	0.687	2.81	5th	0.663	2.24	5th	0.655	1.43
	Average	0.456	0.48	Average	0.438	0.48	Average	0.434	0.48

Tuition Dependence Measures

	One Year Prior			Two Years Prior			Three Years Prior		
Observation	Quentile	Index	Revenue Chg.	Quentile	Index	Revenue Chg.	Quentile	Index	Revenue Chg.
2008	1st	78.89	-0.04	1st	78.61	-1.00	1st	79.06	-0.58
	2nd	64.89	-0.76	2nd	64.56	-1.96	2nd	65.14	-1.92
	3rd	55.28	-0.67	3rd	54.98	1.47	3rd	55.61	-1.17
	4th	45.03	-0.46	4th	45.06	-3.43	4th	46.06	-0.57
	5th	29.36	-2.94	5th	29.72	0.11	5th	30.35	-0.61
	Average	54.72	-0.98	Average	54.62	-0.98	Average	55.28	-0.98
2009	1st	79.43	3.04	1st	78.89	2.47	1st	78.61	2.16
	2nd	65.80	1.64	2nd	64.89	-0.01	2nd	64.56	1.04
	3rd	56.44	1.62	3rd	55.28	0.02	3rd	54.98	-1.74
	4th	46.09	-3.62	4th	45.03	-2.00	4th	45.06	-0.82
	5th	30.34	-4.43	5th	29.36	-2.24	5th	29.72	-2.43
	Average	55.65	-0.37	Average	54.72	-0.37	Average	54.62	-0.37
2010	1st	81.23	3.17	1st	79.43	2.59	1st	78.89	1.92
	2nd	67.81	0.93	2nd	65.80	0.18	2nd	64.89	1.59
	3rd	59.29	0.75	3rd	56.44	-1.08	3rd	55.28	-1.58
	4th	48.64	-0.77	4th	46.09	1.96	4th	45.03	1.43
	5th	32.07	-1.62	5th	30.34	-1.19	5th	29.36	-0.93
	Average	57.84	0.48	Average	55.65	0.48	Average	54.72	0.48