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An Examination of Institutional Factors Related to the Use of Fees at Public Four-Year Universities

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The American public higher education system is experiencing meaningful economic changes to the way it functions, shifting from a “public good” to a private enterprise (Harvey, 2005). A key change, related to the recent economic downturn, has been a large reduction in real-dollar state support for public universities, resulting in a decline in the primary institutional revenue source (Bloom, Hartley, & Rosovsky, 2006; Jones & Wellman, 2010). State appropriations are decreasing (real dollars) at public research universities, with particularly sharp declines starting in 2005 with little to no recovery as of 2011 (Jones & Wellman, 2010). From 2008 to 2009, state and local support decreased \$289 (in 2008 constant dollars) per full-time-equivalent student, creating a situation that has institutions wondering how to replace these funds (State Higher Education Finance, 2009).

In most public institutions, traditional sources of general revenues are direct state appropriations and tuition, which constitute close to 70% of total institutional revenue (Digest of Education Statistics, 2010; Wellman, Desrochers, & Lenihan, 2009). As a result of state governments attempting to control tuition prices at public universities — despite the drastic reductions in state appropriations — institutions are forced to seek alternative revenue streams (Duderstadt, 2007; Mortenson, 2004; Thompson & Zumeta, 2001). Figure 1 illustrates the diversification of alternative revenue-generating activities such as pursuit of grants, development of donor relations, and expansion of auxiliary, or business services. These funding sources now account for a growing percentage of total institutional revenues (Kezar, 2004; Slaughter & Rhoades, 2004).

Institutions now depend on tuition and fees as a primary source of revenue, relying ever more on students to recapture the lost revenue from the state. Net tuition revenue has typically increased faster as state and local revenue fails to keep pace with enrollment growth and inflation. For example, California state universities have experienced a large reduction in state support for higher education; as a result they have dramatically raised tuition by 32 percent in 2009-10, then another 10 percent in 2010-11 (Blood, 2009). The cost of attendance at public higher education institutions is rising at unsustainable rates, with increases as much as 440% over the past 25 years (National Center for Public Policy and Higher Education, 2009). The result is that certain groups of students may no longer be able to afford the cost of public higher education (Integrated Postsecondary Education Data System [IPEDS], 2010)

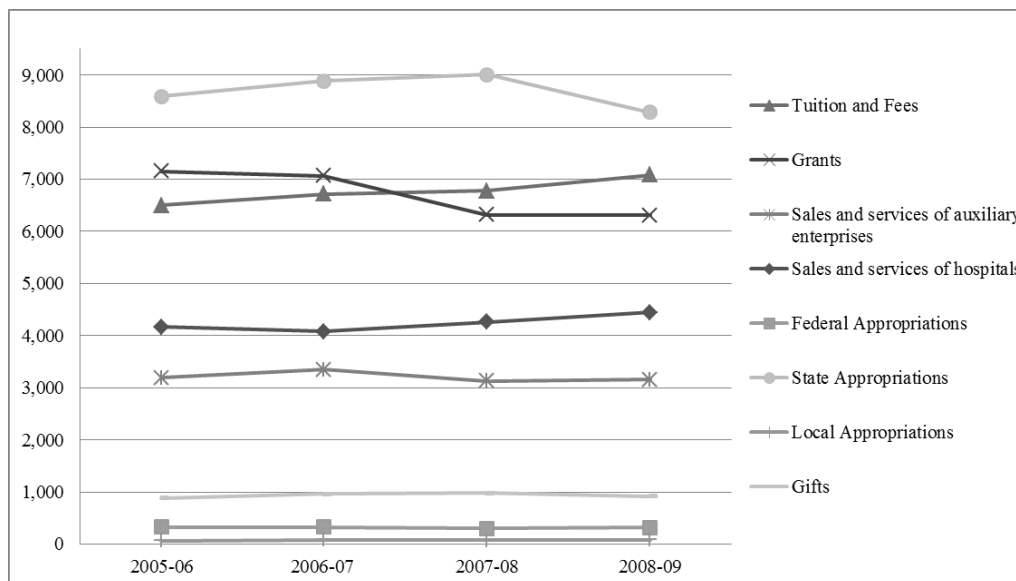


Figure 1. Changes in Revenues per Full-Time Equivalent Student in Constant 2008-09 Dollars at Four-year public universities

Source: U.S. Department of Education, National Center for Education Statistics, 2005-06 through 2008-09 Integrated Postsecondary Education Data System, Spring 2006 through Spring 2010. This table was prepared in October 2010.

Additionally, institutions have begun charging fees to meet their revenue needs, while avoiding any violation of state policy related to tuition increases. Fees are non-tuition student charges (Weisbord, Ballou, & Asch, 2008) and are an important alternative source of revenue to which universities have turned. At public universities, total fees have risen faster than tuition and are now equal to as much as 40 percent of tuition at a number of institutions (Weisbrod, Ballou, & Asch, 2008). Differential and supplementary fee structures can be problematic: if students only pay attention to an institution's listed tuition, they may underestimate the true cost of attendance (Wellman, Desrochers, & Lenihan, 2009). Examining this problem may allow public institutions to address the fee policy and information gap that exists between an institution and its students.

Thus, a primary purpose of this study is to understand the characteristics of institutions that have high fees relative to tuition. Another purpose of this study is to examine institutional factors related to the use of fees at public four-year universities by differentiating tuition from fees. Through regression analysis, fees are compared against variables hypothesized to have an effect on fee-setting behaviors. Ultimately, the goal is to separate out the list tuition that a student observes versus the fee portion, which may be hidden, in order to determine whether institutional revenues have a relationship with the level of fees. By analyzing institutional data, this study highlights revenue-generating activities

that are occurring at public four-year institutions with regards to the market.

The research questions are correlational in nature and investigate the associations between institutional variables (e.g., revenue sources, institutional characteristics) and fee structures at public universities. Examining the institutional variables could potentially show relationships between changing funding sources and fee-setting behaviors. Comparing the results for in-state and out-of-state undergraduate and graduate students may provide insight into whether institutions assess higher fees to certain student populations. The following research questions are posited:

RQ1: As traditional public university revenue streams differ across institutions (e.g., state appropriations), do institutions' fee structures also differ?

RQ2: Does the relationship between institutional revenues and fee structures differ across different student populations?

Literature Review

As economic aspects of American society have shifted towards a free-market philosophy, educational institutions have followed this trend by stepping away from their public role regarding fiscal practices, to one that reflects a perspective that higher education is a private good to be paid for by the consumer (Gumport, 2000). Additional scrutiny comes from citizens' expectations that public institutions will continue to improve access, enhance quality, and cut costs (Giroux, 2002; Gumport, 2000). Many institutions are now expected to invest in new information and communications technologies even though these innovations are extremely costly and unproven to be advantageous (Gumport, 2000). One way institutions can finance these ventures is through implementation of fee-based revenue streams as opposed to tuition increases, as policies surrounding fees are much more flexible for institutions to control compared to changes in list tuition (Weisbord, Ballou, & Asch, 2008).

Douglass and Keeling (2008) contend, "globally, fees and tuition are growing as an important source of income for most universities, with potentially significant influence on the market for students and the behavior of institutions" (p. 1). The authors took their examination of the trends in institutional financing one step further by investigating four factors that are contributing to a shift in the public university paradigm: a) governments can no longer afford to be the primary source of revenue, leading to market-related solutions, b) fee income will need to be an increasingly large component of the funding to replace declining taxpayer subsidization, c) higher education's responsibility is to provide both private and social benefits and more robust need-based financial aid programs, and d) tax

policies will mitigate economic barriers to public university education. Their research showed that the world of higher education finance is continually changing to accommodate the varied interests of key stakeholders involved in decision-making processes (Douglass & Keeling, 2008; Lowry, 2001). Tuition and fees are among the main sources of revenue that institutions believe they will need to remain sustainable (Ehrenberg, 2008).

Research further indicates the importance of increasing tuition and fees in order to maintain perceived quality. Ehrenberg (2008) states that “in the higher education market, posted price, tuition and fees, is taken by many to be an indicator of quality; if an institution lets its tuition fall relative to its competitors it runs the risk of being perceived as an inferior institution” (p. 10). Higher education institutions generally stress the need for additional monetary resources in order to provide and maintain quality and, most notably, instruction (Vedder, 2004). However, the Delta Cost Project (2010) discovered that the real spending per student for instruction only rose by 9.9 percent from 1999 to 2009 where all other spending on students (such as student services) increased by 19.4 percent and operations and maintenance rose by 20.02 percent.

At public institutions, gross tuition revenues consistently increased at a higher rate than listed prices. (Wellman, Desrochers, & Lenihan, 2009). This phenomenon occurs, in part, because institutions implement differential pricing models among various student populations. Differential tuition may depend on how lucrative a major is (e.g., business, law), the time a course is offered (e.g., weekend or evening), course level, or even the location of the course (e.g., online) (Hearn, 2003; Weisbrod, Ballou, & Asch, 2008). Institutions may also charge higher tuition to out-of-state students, professional schools, and international students where full-cost pricing is progressively more common (Delta Cost Project, 2010).

Additionally, universities are using fees as a way to combat the restrictions and stigma related to increases in tuition prices. Universities “are beginning to experiment with finer distinctions in the pricing of their educational services” in an effort to generate more revenue without additional oversight (Hearn, 2003, p.12). For instance, implementation of student fees associated with technology services, separate from tuition, provides the funds to create improved student services (Wellen, 2005). The fees that public universities are charging have been increasing drastically and are now rising faster than tuition at some institutions (Weisbrod, Ballou, & Asch, 2008; Hearn, 2003). As a result, when institutions present the annual cost of attendance as tuition and mandatory fees, students inaccurately estimate the price increases in cost of attendance (Arnott, 2012; Wellman, Desrochers, & Lenihan, 2009). By utilizing the user-fee approach, colleges and universities are able to increase revenues while limiting highly visible increases in their stated tuitions, yet research has not been

conducted to determine if these fees will actually raise total or net revenues for an individual institution (Clark, 1998; Hearn, 2003).

Most of the existing research about tuition and fees examines them as one entity, rather than looking at them separately (National Center for Education Statistics, 2010). Although these studies have helped organize the overwhelming amount of information one can find about the costs of college, they do not provide an accurate picture of the true cost of attendance (Weisbrod, Ballou, & Asch, 2008). No research has been done to differentiate between tuition and fees, making it unnecessarily complicated for a potential student to determine the actual cost of attendance (Arnott, 2012; Hearn, 2003). The current study is the first of its kind to compare the differences between tuition and fees and begins to fill a gap in the literature.

This study contributes to research on the price of higher education by shedding light on the market behaviors of institutions with regard to alternative revenue sources. Through this study, higher education administrators may better understand how they can cooperate and create integrated transparency while at the same time operating in a manner that maintains the highest quality possible and remaining competitive in the ever-changing market. This analysis of fees may also inspire changes to the higher education environment that will allow to students make informed decisions about which institutions they can truly afford.

Theoretical Framework

In order to frame the study of fees at public higher education institutions, I draw upon resource dependency theory and the theory of academic capitalism. Resource dependency theory analyzes the use of revenue during times of decreased resources (i.e., state appropriations), and the theory has been used as a justification for universities' increases in fees (Slaughter & Leslie, 1997). Building on resource theory, academic capitalism states that institutional priorities lead them to construct environments that not only draw students to them, but generate revenue in order to improve their overall operations (Slaughter & Rhoades, 2004). Collectively these frameworks guide my analysis on fees and help me understand the shift that has and is occurring at these institutions.

Resource Dependency and Fees

Slaughter and Leslie (1997) indicate, "resource dependency theory suggests that as unrestricted monies for higher education constrict, institutions within a national system will change their resource-seeking patterns to compete for new, more competitively based funds" (p. 65). Resource dependency theory further suggests that in order to understand organizations like colleges and

universities, one must pay attention to their connections to external agents. Among public higher education institutions that receive state appropriations, funding cuts will likely result in institutions increasing their tuition prices to make up for the loss of revenue. In terms of fees, the same parameters might be used; the movement to align higher education operations with market practices becomes increasingly evident as one looks at institutions' creation and use of fees. As universities become increasingly engaged with the market, the student sector experiences a large financial impact as institutions continually look for ways to charge more (Trombley, 2003). For the purposes of this analysis, I propose that charging fees may not be a result of resource dependence, as many institutions claim, but an opportunity for universities to mimic market behaviors and make self-directed choices.

Academic Capitalism

Academic capitalism refers to the growing trend whereby universities derive supplementary income from sources other than those upon which they relied in the past: tuition, state appropriations, and donations/endowments (Hearn, 2003). Slaughter and Rhoades (2004) define academic capitalism as “the involvement of colleges and faculty in market-like behaviors” (p. 11). Furthermore, academic capitalism involves “the pursuit of market and market-like activities to generate external revenues” (Slaughter and Rhoades, p. 37). Interestingly, academic capitalism involves the pursuit not of mass markets, but of various privileged niche student markets — or a subset of the larger market, effectively changing one of the basic functions of most public higher education institutions from a focus on mass education to a focus on specific student subsets (Slaughter & Rhoades, 2004; Ylijoki, 2003).

The theory of academic capitalism has developed and evolved since its inception. National and local contexts have shaped academic capitalism by concentrating on the ways in which the traditional missions of universities have shifted under market pressures, often redefining mission as service to economic development rather than broad service to a democratic citizenry (Slaughter & Rhoades, 2004; Ylijoki, 2003). For example, academic capitalism appears to change the goals of university administrators and also the way departments function. Department heads must develop strategies that enable their units to meet increasing market demands while administrators must develop strategies that will result in university success in national and international rating schemes (Slaughter & Rhoades, 2004). The shift in mission can also be seen in the financing of education, where prices continually increase and finding new revenue sources is a daily concern.

Tuition and fees at “higher education institutions in the United States have

increased, on average, by 2 to 3.5 percentage points a year more than the rate of increase in consumer prices” (Ehrenberg, 2007, p. 1). On average, prices are now reaching upwards of \$15,000 at public colleges per academic year (Ehrenberg, 2007). However, these prices are not a true reflection of the cost, as a number of students will have to pay additional fees throughout their higher education careers and they are paying for a product priced according to a variety of characteristics. The increasing economic burden facilitates a departure from the notion that students are simply learners because students are now defined in market terms: they are customers. When students are viewed as only consumers who are purchasing an educational product, education shifts from being a creative process to being a simple exchange of money for services (Sharrock, 2000). Although students have always “purchased” their education, the economic aspect of their campus identity used to be secondary to their identity as a learner — an identity with far different implications than that of a customer (Winston, 1999).

Academia has witnessed rising apprehensions about the increased engagement of universities in academic capitalism in response to decreased government funding, the commodification of knowledge, and the increased interplay between universities and the private sector (Ylijoki, 2003). Scholars such as Slaughter, Rhoades, Leslie, and Ylijoki maintain that the increasing market-orientation of the higher education sector gives rise to a totally new culture that displaces traditional academic values and norms. As fees become commonplace within public higher education institutions, so too does the understanding that fees are the norm within higher education institutions. Students are no longer a key component in the decision-making process but customers that generate revenue. By examining the types of fees through the lenses of academic capitalism and resource dependency, the goal of the current study is to understand whether charging fees is an institutional necessity due to decreasing government appropriations, or whether charging fees is a market-driven behavior to increase revenue streams. This study also differentiates between tuition and fees through the lens of academic capitalism, filling the research gap that exists regarding differences in tuition and fees.

Empirical Analysis

As revenue generation activities at public higher education institutions shift to alternative methods, this study investigates the institutional factors associated with increased use of fees in relation to tuition. The research differentiates between tuition and fees by separating out tuition from fees based upon the IPEDS designation. The study is correlational in nature and uses regression analysis to investigate whether institutional variables, such as revenue sources, enrollment, and government influences, are associated with fees charged

at public four-year universities. By studying fees through a correlational analysis, identified associations may begin to highlight certain factors that influence the differences in fees at various public four-year universities. Additionally, when viewed through the lens of academic capitalism, the data analysis may begin to show the various tactics that could be used when universities make alterations in their fees.

Data Sources and Sample

The data source is the Integrated Postsecondary Education Data System (IPEDS). IPEDS is a secondary data source of interrelated surveys conducted annually by the U.S. Department of Education's National Center for Education Statistics (NCES, 2011). IPEDS data collection is much like a census of institutions, gathering information from every college, university, and technical and vocational institution that participates in federal student financial aid programs. Utilizing the IPEDS datasets allowed for comparison of revenue activities across institutions. This analysis included only public four-year institutions in order to obtain results that allow for comparative analysis across institutions with similar missions.

The IPEDS database provided the necessary data to examine the differences in tuition and fees when compared to institutional factors. This study included variables from 2007-08 and 2008-09, in the datasets IPEDS Finance (F), IPEDS Institutional Characteristics (IC) and IPEDS Fall Enrollment (EF). The data from 2008-09 included the tuition and fees where the data compiled from the other revenue sources, as well as enrollment, were lagged by one year to see if one variable affects the other.

Dependent Variables

Charging fees has been a common profit-generating activity in the private sector for some time. Private industry employs fee charges on top of base costs so that initial sticker prices appear lower, as in the case of phone bills. As a result people may be more inclined to purchase the item based on the sticker price without considering other relevant costs. In higher education, although the implementation of fees seems to have begun as a resource dependency issue when states were continually cutting appropriations, colleges and universities have begun to see the inherent benefit of the fee structure. More recently it appears that universities may be using fees as a tool to remain viable in the marketplace. Therefore, including a measure of fees in this study creates the opportunity to see what could be happening and to explore whether institutional behaviors align with the theory of academic capitalism as a way to engage in market-like behaviors

and remain a competitive entity in the marketplace.

IPEDS defines tuition as an “amount of money charged to students for instructional services. Tuition may be charged per term, per course, or per credit” (<http://nces.ed.gov/ipeds/glossary>). Fees are defined as a “fixed sum charged to students for items not covered by tuition and required of such a large proportion of all students that the student who does not pay the charge is an exception” (<http://nces.ed.gov/ipeds/glossary>). In most cases, IPEDS separates fees from tuition based upon an emphasis of what the student charge is used to fund. Whereas tuition is designated for instructional purposes, fees can be used not only for instruction but also for technology, student activities, transportation, and athletic/recreational purposes.

For this study the dependent variable of required fees was measured as the percentage of fees to the total cost: $Y = \text{fees} / (\text{tuition} + \text{fees})$. Analyzing fees as a percentage of total costs makes it easier to compare institutions by normalizing on total cost. In order to understand the use of fees more holistically, the full-time undergraduate and graduate student fees will be analyzed as well as in-state and out-of-state variables for each group. By including both in- and out-of-state students, further trends may be discovered with regards to which student populations are charged a higher percentage of fees relative to the tuition they pay. Undergraduates may also experience differences in the fees they pay compared to graduate students, indicating that the fees could be a result of market behaviors and not a necessity.

Table 1 contains the summary statistics for the average price of tuition and fees at four-year public institutions for both undergraduates and graduates, as well as in-state and out-of-state students. Examining the average tuition and fees highlights the fact that out-of-state students pay more in tuition when compared to in-state students. Despite the tuition difference among in- and out-of-state students, the reported required fees are more consistent between the two populations.

Table 1. Summary Statistics on FTE Undergraduate and Graduate Tuition and Required Fees 2008-2009

	<i>Mean</i>	<i>Standard Deviation</i>
Undergraduate In-state Tuition 2008-09	\$4,929.4	2,644.1
Undergraduate In-state Required Fees 2008-09	\$1,419.9	1,483.8
Undergraduate Out-of-state Tuition 2008-09	\$13,351.8	5,600.2
Undergraduate Out-of-state Required Fees 2008-09	\$1,615.9	2,136.9
Graduate In-state Tuition 2008-09	\$6,476.9	3,980.1

Graduate In-state Required Fees 2008-09	\$1,465.1	2,054.8
Graduate Out-of-state Tuition 2008-09	\$14,080.9	5,747.8
Graduate Out-of-state Required Fees 2008-09	\$1,652.3	2,611.5

Summary statistics for the dependent variable of fees indicate that on average fees represent 11% of the total list price (tuition and fees) for both out-of-state undergraduate and graduate students (see Table 2). Across all four-year public institutions, on average, fees represent 20% of total in-state graduates' and 23% in-state undergraduates' list price. The averages indicate that in-state undergraduates have the highest percentage of fees to total cost, which is likely due to lower tuition since fees for in-state and out-of-state students are similar. The range for each variable, illustrated in Table 2, illustrates that some universities are not charging fees where others are charging only fees. For example, at some universities list tuition and fees are the same, so the percentage of fees to total cost would be 100 percent.

Table 2. Summary Statistics on Selected Variables in 2007-08 on FTE Graduate and Undergraduate Required Fees 2008-2009¹

	<i>Mean</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Standard Deviation</i>
<i>Dependent Variables:</i>				
Undergraduate In-state Required fees 2008-09	23.8%	0	100	23.1
Undergraduate Out-of-state Required fees 2008-09	11.6%	0	100	14.1
Graduate In-state Required fees 2008-09	20.7%	0	100	22.8
Graduate Out-of-state Required fees 2008-09	11.1%	0	99.8	13.8
<i>Independent Variables:</i>				
Estimated FTE Undergraduate Enrollment 2007-08	1,514.1	0	8,458	1,489.3
Estimated FTE Graduate Enrollment 2007-08	918.5	0	13,110	1,613.7
Tuition & Fees (After Discounting) 2007-08 ²	23.7%	0	100	12.1
Sales & Services of Auxiliaries 2007-08 ²	9.6%	0	42.1	6.9

Gifts 2007-08 ²	1.6%	-.3	20.3	2.1
Investment Income 2007-08 ²	1.0%	-15.9	11.7	1.6
Government Appropriations 2007-08 (<i>Federal, State & Local</i>) ²	32.7%	0	96.6	12.9

¹Required fees were used as a percent of the Tuition & Required Fees

²All Revenue Sources were used as a percent of the Total Revenue

Independent Variables

The independent variables come from the institutional data collected from the IPEDS database. Each independent variable or revenue source was used as a percent of the total revenue to make the comparative analysis more manageable. By looking at the institutional variables, in reference to required fees, analysis can begin to show which variables are more likely to affect the increases and decreases in fees at public institutions as well as indicate whether the variables are more market driven or more resource dependent. Among these variables, patterns may emerge that illustrate what types of public institutions are more likely to use and increase the required fees.

Institutional Variables

The institutional variables in this analysis include the types and amounts of revenues institutions are collecting. Examining revenue sources unique to the college allowed for the understanding of whether the institution is likely to look at fees due to decreases or changes in other revenue streams. The revenue activities used for this study included sales and services of auxiliaries, gifts, investment income, and government appropriations. These variables were chosen to show that while certain institutions are using fees to combat decreasing state resources, other institutions exhibit an academic capitalism mindset through the use of fees as a market-based revenue-generating activity.

Institutional variables also include institutional characteristics unique to each university being explored. By looking at institutional characteristics, this analysis may show that certain subpopulations of students are being charged different fees relative to tuition. This could indicate the fact that universities are using fees as a marketing tool to capitalize on certain student subsets. The institutional variables examined are Estimated FTE Undergraduate Enrollment 2007-08, Estimated FTE Graduate Enrollment 2007-08, Tuition & Fees after discounting 2007-08, Sales and Services of Auxiliaries 2007-08, Gifts 2007-08, Investment Income 2007-08, and the Carnegie Classification of institutions that are considered Bachelors, Masters, or Ph.D.

Examining the effects that state and national funding issues have on fee-setting behavior is also critical to understanding the revenue process. Investigating federal, state, and local appropriations, through the lens of academic capitalism, provides the opportunity to see if changes in fees are a result of necessity or to remain competitive in the market. For this analysis, the three entities were combined into one percentage called “Government Appropriations 2007-08.” The three revenue sources were combined so that all appropriations would be accounted for in the analysis process.

The Statistical Model

$$Y_{it} = \alpha Institutional_{i,-1} + \epsilon_t$$

The equation above is a linear regression analysis that takes the dependent variable (ratio of fees to total tuition and fees) as a function of the lagged institutional factors likely to affect institutional fee-setting behaviors. Framing the research in this manner may allow for the discussion on whether the factors, when regressed with fees, are a result of resource dependency or academic capitalism on the part of the institution. Overall, the data could potentially begin to show whether public institutions are aligning with market-driven behaviors that the private industries follow.

Limitations

Since this is a single time point study some may argue there are limitations in addressing the effect institutional variables have on fees. However, as this is one of the first studies to examine fees, conducting a single time point study is a necessary first step in beginning to understand how institutions are using fees and what the next steps might potentially be. In analyzing a set of data for the first time, many nuances may be overlooked as some fees are reported very differently from school to school. Therefore, analyzing the data may pose inconsistencies among similar institutions as fees are examined separate from tuition.

Results

The summary statistics, taken as a percent of the total cost or total revenue, are displayed in Table 2. Even though the tuition is generally higher for out-of-state students, in-state students may experience increased fees when compared to out-of-state students because fees are generally not as restricted as tuition. Table 3 displays results of selected variables on required fees as compared to the institutional variables.

Table 3. OLS Regression Model Estimates of Effect of Selected Variables in 2007-08 on FTE Graduate and Undergraduate Required Fees 2008-2009¹

	<i>Model 1</i> <i>Undergraduate</i> <i>In-state</i>	<i>Model 2</i> <i>Undergraduate</i> <i>Out-of-state</i>	<i>Model 3</i> <i>Graduate</i> <i>In-State</i>	<i>Model 4</i> <i>Graduate</i> <i>Out-of-</i> <i>state</i>
Estimated FTE Enrollment	.002* .0008	-.0005 .0005	.0007 .0007	-.0005 .0005
Tuition & Fees (After Discounting) ²	-.273** .086	-.111* .055	-.195** .0896	-.060 .057
Sales & Services of Auxiliaries ²	.165 .137	.1797* .088	.029 .155	.156 .099
Gifts ²	.395 .458	.013 .296	.812 .550	.465 .350
Investment Income ²	1.06** .578	.524 .374	1.157* .600	.602 .382
Government Appropriations ² (Federal, State & Local)	.449*** .084	.095 .054	.444*** .098	.101 .062
Carnegie Classification (Bachelors)	6.716* 3.527	2.493 2.281	-2.158 4.798	-1.586 3.053
Carnegie Classification (Masters)	12.096*** 3.265	4.851* 2.112	4.581 4.270	2.098 2.716
Carnegie Classification (Ph.D.)	2.786 3.828	2.573 2.475	-1.821 4.613	-.018 2.935
<i>R-squared</i>	.127	.043	.092	.036
Observations	N=596	N=596	N=520	N=520

* $p < .05$, ** $p < .01$, *** $p < .001$

¹Required fees were used as a percent of the Tuition & Required Fees

²All Revenue Sources were used as a percent of the Total Revenue

For the variable of Estimated FTE Enrollment, the only group of students that showed a slightly significant positive relationship was in-state undergraduates. However, the size of the relationship is too small to be a practical effect; thus, changes in full-time enrollment are found to have little effect on the use of fees at public four-year institutions.

Examining the variable Tuition and Fees Revenue (After Discounting), shows that for each percentage point increase in the variable as a percent of total revenue, in-state undergraduates' fees as a ratio of total tuition and fees decreases by .273% percentage points. An additional finding was that for each unit increase in tuition and fees after discounting, in-state graduates' fees decrease by .195% as a percent of total tuition and fees. The findings were not significant for out-of-state undergraduates and graduate students. The data indicate that public universities that are more reliant on tuition and fees as revenue sources are less reliant on fees relative to tuition as a financial strategy.

The revenue variable of Sales and Services of Auxiliaries and Gifts is not associated with any statistically significant findings among the four models that were analyzed. The data show no clear patterns or correlations in the 2008-09 time period. The data on investment income show that for both in-state undergraduates and graduates there is a slight statistically significant positive correlation. For each unit increase in investment income for in-state undergraduates, fees increase by 1.06% and graduates by 1.157 % as a percent of total tuition and fees. For both out-of-state student populations, the results were not significant. The results demonstrate that the universities that are investing more are also increasing required fees more than those public institutions that are not investing.

The analysis for the variable Government Appropriations shows that for both graduate and undergraduate in-state, full-time students, there is strong evidence that required fees and government appropriations are positively correlated. For each unit increase in government appropriations, as a percent of total revenues, in-state undergraduates' fees increase by .449% as a percent of total tuition and fees. Another significant finding is that for each unit increase in government appropriations, as a percent of total revenues, in-state graduates' fees increase by .444% as a percent of total tuition and fees. For both groups of out-of-state students, the results were not significant. The data indicate that the public universities that are more reliant on government appropriations, including federal, state, and local appropriations, are also more reliant on required fees as a financial strategy to combat decreasing revenue streams. Both outcomes are extremely relevant to higher education financial planning and show that further research needs to be done on the fee structures at public institutions.

The final institutional variables examined were the Carnegie

classifications of Bachelors, Masters and Ph.D. institutions. Most of the results were not significant; however, for in-state undergraduates there were three significant findings. For schools classified as Bachelors, students can expect an increase of fees of 6.716%; for schools classified as Masters, a one-unit increase is likely 12.096% for fees. For out-of-state undergraduates there was a slightly significant finding for those schools classified as Masters: that fee increase by 4.851%. The outcomes related to the Carnegie classifications show that undergraduates enrolled in Masters institutions were more likely to experience an increase in fees.

As a check for robustness, the California schools were eliminated for the second OLS regression analysis (Table 4) because they did not report tuition at that time, as all student revenue was collected as fees. The results are similar; however, the most significant change occurred with the variable Sales and Services of Auxiliaries. For each unit (sales and services in the auxiliaries as a percent of total revenue) increase in the sales and services in the auxiliaries, as a percent of total revenues, for in-state undergraduates' fees increase by .557% and out-of-state undergraduates' fees increase by .278% as a percent of total tuition and fees. The variable for out-of-state graduates had a significant finding of .389% ($p < .001$) where the variable for in-state graduates had a significant finding of an increase per unit of .255%. The findings suggest that the schools that are using their auxiliaries more and more are also increasing required fees more than those public institutions that are not using their auxiliaries as heavily for revenue-generating activities. It may be that schools that are more entrepreneurial in nature, by establishing so-called businesses or auxiliary units within the university, are more likely to be associated with fees as revenue-generating activity as well.

Table 4. OLS Regression Model Estimates of Effect of Selected Variables in 2007-08 on FTE Graduate and Undergraduate Required Fees 2008-2009 (excluding California)¹

	<i>Model 1 Undergraduate In-state</i>	<i>Model 2 Undergraduate Out-of-state</i>	<i>Model 3 Graduate In-State</i>	<i>Model 4 Graduate Out-of- state</i>
Estimated FTE Enrollment	-.001*	-.001*	-.002**	-.001**
Tuition & Fees After Discounting ²	.069	.056	.066	.056

Sales & Services of Auxiliaries ²	.557*** .111	.278** .0899	.389*** .112	.255** .096
Gifts ²	.337 .367	-.015 .297	.6697 .403	.281 .346
Investment Income ²	.991* .462	.364 .374	.876* .430	.557 .3696
Government Appropriations ² (Federal, State & Local)	.195** .069	.021 .056	.125* .073	-.008 .063
Carnegie Classification (Bachelors)	1.766 2.8396	1.276 2.981	-4.681 3.529	-1.342 3.030
Carnegie Classification (Masters)	5.904* 3.265	3.270 2.129	-.102 3.144	1.629 2.700
Carnegie Classification (Ph.D.)	5.826* 3.083	3.509 2.496	2.121 3.422	2.376 2.939
<i>R-squared</i>	.098	.040	.082	.045
Observations	N=564	N=564	N=487	N=487

* $p < .05$, ** $p < .01$, *** $p < .001$

¹Required fees were used as a percent of the Tuition & Required Fees

²All Revenue Sources were used as a percent of the Total Revenue

The four OLS regression models looked at both in-state and out-of-state undergraduate and graduate students. From the data analysis, it appears that the in-state undergraduates and graduate students are the most affected by changes in fees. The out-of-state students experienced lesser changes in their fees. The relationship between changes in fees and in-state students could be explained by the fact that tuition for in-state students is under closer scrutiny by the state, where it may not be for out-of-state students. When other revenue sources are impacted due to institutions' lack of authority to increase tuition, it seems that fees are increased for in-state students.

Discussion and Conclusion

In the academic capitalism knowledge learning regime, American society has shifted its focus towards the success of the individual through entrepreneurialism, innovation, and the market (Slaughter & Leslie, 1997). Interpreting the results of this study through the lenses of resource dependency theory and academic capitalism indicates that some institutions may not be increasing fees as a pure necessity but rather as a way to become market-driven entities. Upon examination of the IPEDS data, it appears that charging students fees, in addition to their base tuition, embodies that mindset. Consistent with the theory of academic capitalism, schools that exhibit market-like behaviors, through the sales and services of consumer-based products, are much more likely to increase fees. Universities appear to use fees as a way to combat decreased state appropriations revenue; however, the story becomes more complex when all other revenue sources are examined in relation to government appropriations, sales and services in the auxiliaries, and investment income.

Examining fees leads to other critical questions that need to be explored in order to understand fee structures at any given institution. For instance, when students choose and enroll in an institution and department, are students told about these fees upfront or are institutions giving them the sticker price? If they are told about the fees, what kind of information are they given, if any, about how those fees are being used to further their educational development? By exploring these types of questions, the results could lead to information about alternative revenue-generating activities that are occurring at higher education institutions.

The lack of differentiation between tuition and fees relates back to what types of fee policies, especially at the departmental and organizational levels, institutions have adopted in an effort to control revenue streams. As accountability continues to remain a hot-button issue, this aspect of missing information about fees will surface as key stakeholders seek to understand an institution's financial operations. If universities could be more transparent with this information upfront, they could potentially diffuse the potential opposition. Institutions need to create policy that is clear in the way the fees are collected, used, and ultimately increased.

Despite the stringent rules and regulations that can surround tuition increases, most states do not have oversight when it comes to the additional fees students pay to attend (Weisbrod, Ballou, & Asch, 2008). Some institutional fees are mandatory and are systematically included in the tuition price. However, these additional fees may not be reported in the tuition and fee price. Fees may range from orientation fees to departmental fees, to fees charged for reaching a threshold number of credit hours. The inherent policy oversight surrounding fees

has created a situation that allows universities to increase the cost of attendance without directly increasing basic tuition costs. The question then becomes: why are institutions using these fees to increase revenue? Is it just to make ends meet or are fees the result of ulterior motives? What kind of information are students given, if any, about how fees are being used to further their educational development? The findings from this study suggest that fees are indeed being used to increase revenue, as are other sources of funding; however, it appears that fees may have a market component creating an environment that moves away from an institution's role as it relates to public good.

In the end, much of the existing research has paid apposite attention to the tuition portion of financing of higher education, but the research has been limited to non-existent when it comes to evaluating the use of fees separate from tuition (National Center for Education Statistics, 2010). It has become increasingly necessary to examine fees because some public universities are looking to fees as a potential new revenue source. Further research needs to be done to differentiate tuition and fees and to further fill the research gap that currently exists. This study only scratched the surface of actual versus perceived costs of attending college. The data illustrate that fees are not the sole or necessarily inevitable solution for meeting public institutions' revenue shortfalls, but they represent universities' growing tendencies to follow market trends using fees as a tactical approach to remain competitive in our global economy.

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