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THE STATE OF HIGHER EDUCATION: TUITION AND FACULTY SALARIES

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ABSTRACT

At well over five hundred percent since 1985, the cost of higher education has increased faster than that of any other commodity in the US. Considerable attention has been given to the causes and consequences of what is arguably an unsustainable rate of growth in the costs of higher education. Prompted by a review of the literature, this essay attempts to examine the relation between faculty salaries and tuition costs. Specifically, attention is focused in this essay to studying if rising faculty salaries account for the rates of inflation in college costs. Data is examined from Pennsylvania State University and its Big 10 peer schools to evaluate the hypothesis. The essay adopts a production view of the educational service industry and related limitations and assumptions are highlighted. While a strong correlation between tuition and faculty salaries appears to exist, an analysis of other unquantifiable factors that affect tuition are excluded from the study. This prohibits a high level of certainty that faculty expenses directly influence tuition rates. While the results are only suggestive, the questions it raises for future research are indicated.

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Chapter 1

The State of Tuition

A consensus has been reached: post-secondary education tuition in the U.S. is expensive, and increasingly so. If benchmarked from 1978, college tuition and fees have increased 1120%, which is four times higher than the increase in the consumer price index (“Cost of college”, 2012). When pegged to the costs in 1985, a college education is 559% more today than it was then (“Why tuition has skyrocketed”, 2012). Anchored more recently, college tuition and fees at four-year public schools have risen 150% since 1990, averaging \$8244 per student this past academic year (Mitchell, 2012). Peering closer into the data, the cost of a college education has increased rapidly for all institutions of higher education except public two-year colleges (The CollegeBoard, 2011).

Comparing tuition to other commodities throws into sharp relief the exponential increases students must bear each year to buy this service. Education costs have been inflating more than any other service. According to the Department of Education, tuition has increased by 15% over the last two years at 4-yr public schools and by 10% at private schools, which is more than the inflation of the cost of health care (Weissman, 2012). There is little wonder then that total student debt in the US has reached a whopping one trillion dollars, eclipsing all other kinds of debt held by Americans. Indeed some have argued that the student loan market is the next bubble primed to burst.

However, the advertised price of a college education is merely its 'sticker price.' When the net price is considered, a less alarming picture of the situation emerges (Leonhardt, 2009). Sandy Baum, an economist at the College Board defines 'sticker prices' as the advertised cost for attending a college or university. In contrast, the 'net price' refers to costs actually borne by a student. Whereas the sticker price has gone up considerably, rising faster than any other price within the US economy, the 'net price' has risen less sharply, without as much of an exponential increase. In fact, according to the Department of Education, the average net price at four-year public schools went up only 4.6% percent between 2007-2008 and 2009-2010, and by 6.4% at private colleges (Weissman, 2012). Despite these seemingly modest rates of inflation in net prices, it should be noted that these numbers look only at tuition and fees, while ignoring the cost of room and board, food, books, and other expenses, all of which are potentially borne by students. When looking closer at tuition prices against that for room and board, the latter have actually gone up more than tuition (Weissman, 2012).

If the cost of buying educational services has increased so steeply, it would seem reasonable to suppose that it is the cost of teaching that principally drives up the overall bill. Yet, an empirical regularity offers a paradoxical caveat: institutions of higher education are still spending about as much to teach one student today as they did in 1985 ("Where the jobs are", 2012). As celebrated by the National Association of State Universities and Land-Grant Colleges, the cost of teaching has remained flat for almost a quarter of a century partly because universities have engaged in stringent measures to reduce the cost of teaching (CITE? 2008). It is this seeming paradox that this thesis attempts to unravel. Whereas post-secondary education prices (whether sticker or net)

have steadily increased over the past couple of decades, the cost of teaching has remained flat. The question of the main causes of college costs remains.

This essay examines the cost of higher educational services in analogy with producing a tangible product in a manufacturing setting. However, as argued in the next section, certain features of the educational services make the relation between cost and price ambiguous at best. Education is increasingly considered an economic commodity and not, as it once was thought, a public service. Despite or perhaps because of this widespread belief, the endemic features of the educational market make cost control difficult if not impossible. Accordingly, in Chapter 3 this essay reviews the literature to substantiate the claim that though many causes have been suggested, none has been singled out as the principal driver of the rising cost of post-secondary education. To examine the popular perception that extravagantly paid teachers are a major cause of exploding higher education costs, this paper focuses on trying to understand the precise effect faculty expenses have on rising tuition. In Chapter 5, it presents some empirical results of this relationship using data from the Big Ten schools as well as Penn State University. Limitations of the essay and questions for future research are indicated in the concluding chapter.

Chapter 2

The Educational Production Function

Before delving into how the university operates today, it is important to understand how the past has affected the present. The present state of the contemporary research universities did not emerge all at once and mysteriously- instead, much of its structure and functioning may be explicable by attending to the consequences of a central feature affecting its production function: the uncertainty due to asymmetrical information.

The Production Function

Once not so long ago, the publicly funded universities in particular, but higher education in general, were thought of as a public good and a public service. In marked contrast, it has now become widely acceptable to consider the university as a place for the production of useful knowledge through research and employable labor through teaching. If one took seriously the idea of the university as a production system, whether of knowledge or labor, then one may apply the manufacturing logic of a factory to it. As a factory for the production of knowledge and labor, the production function of the university can be better understood by attending to its inputs and outputs. Focusing only on the function by which employable labor is produced, it becomes clear that severe uncertainties plague the process by which raw materials are transformed into finished products, as labor suitable for employment.

The quality of the raw material—students entering the university system- is known only through the SAT scores and other second-hand measures of intellectual and social skills necessary for university life. The other inputs into the production process include additional labor, materials and facilities, as with any production system for commodities. The same difficulty that afflicts the evaluation of raw material quality also affects the evaluation of the inputs to the conversion process. The effectiveness and efficiency of teaching faculty as the primary labor input in the production of employable labor are just as hard to define and measure as are the quality of tangible and intangible facilities that contribute to the successful production of employable labor. How ‘technology enabled’ should classrooms be to ensure optimal learning outcomes? Are the learning styles of each student so peculiar and different calling for a personalized mix of faculty teaching styles, facilities, and supporting infrastructure? Since many factors go into providing a service and the end product cannot be seen or touched but only felt by each individual customer or group of customers there seems no reliable way to measure the quality of the inputs and outputs as long as the effectiveness of services rendered depends on the needs and wants of the customer. What may satisfy one customer may not satisfy the next, though the inputs are the same. Moreover, even the quality of this finished product cannot be evaluated clearly. For example, is the criterion for high quality of the finished product the number of job offers, the subjective judgment of recruiters, the life-time earnings of a college graduate, or some other measure?

Therefore, service businesses such as education experience more difficulties in assessing the quality of their production process and final output because the transformation process by which inputs are turned into outputs is ambiguous at best.

Moreover, the human elements in the production process—both students and faculty- are characterized by a deeper problem: that of asymmetric information. Students and faculty know more about their own abilities, capacities, and proclivities than what can be captured through secondary methods of measurement. As stated earlier, exam results and SRTEs respectively are only weak indicators of student and faculty performance. Students know better of their capabilities than any SAT scores, essays and other indicators of performance may reveal. Similarly, the capacity of faculty to teach well is captured only with a large degree of noise by such metric as SRTEs and the student grapevine. Extraneous and random factors affect such measures, as for example, the semester in which a particular course is taught, or the degree of difficulty of the course. In addition, students and parents tend to overvalue or be impressed by such elements of the production process as fancy buildings, expensive gyms, manicured lawns, and high-end foods outlets on campus.

Moreover, since the student is both raw material and customer, the educational enterprise is marked by a foundational asymmetry of information. Arguably the teacher-student relationship is at the heart of the educational experience but the customer is not able to evaluate the quality of the service provided in any reliable way. Since like doctors and other knowledge intensive professional service providers, teachers know more about the subject matter than the students do, it is the faculty who can decide the content, quantity, and scope of the educational service. Just as it is doctors who control medical costs by the stroke of their prescribing pen, so also the faculty as the apparently final arbiters of educational services could contribute to the inability to control the production costs of higher education. Since no definite mix of raw materials can be identified as the

correct amount of secret ingredients to churn out high achieving, knowledgeable workers, how do we know how much spending is enough to achieve our desired output? It is nearly impossible to determine necessary inputs when a desirable output cannot be unambiguously defined and rests on the decisions of administrators and faculty.

In understanding the present state of higher education, it is important to take this condition of uncertainty and asymmetric information into consideration. While the end product is employable youth, the measurement and even definition of such inputs as raw materials and faculty are ambiguous at best. Whether the quality of professors/teachers, the quality of additional support services outside of the classroom, the quality of classroom materials, or perhaps most importantly, the quality of the student, creating a list of easily definable characteristics for each of these inputs presents quite a problem. What makes one professor better than the other? How do we gauge the quality of incoming students? How do additional classroom resources, such as the latest computers and e-homework, supplement professor presentations? These are questions that really do not have one perfect answer, mostly because the answer depends on the student. Some universities will argue that ill-prepared students alone cause education costs to increase (Martin, 2012). Yet, what works for one student may not work for the other, and this gap in learning is often not easily identifiable, if at all.

Despite all complexities, administrators still needed to develop a way to manage the production process, both to contain costs and to attract new students and therefore grow the business. In the effort to make the process more manageable, over the years, many methods of evaluation have been tried within the university to try to close this information gap. Peer evaluations were once thought to be a good method to evaluate of

one's ability to teach: one academic critiquing another. The main disadvantage to this is that every individual in academia has a different perspective on which teaching method is best. Someone then had the idea that asking the actual products to rate the raw materials might be a better measure of input quality. This method has numerous problems associated with it. First and foremost is the fact that some students will not turn in evaluations at all and those who do may often do so half-heartedly or jokingly. This does little to assist the professor and university in establishing which faculty are performing well and which need to improve their approaches. These evaluations sometimes are taken so seriously that one small negative comment or suggestion can trigger severe punishment for the faculty member involved. At Penn State, it has been said that even one bad score out of ten can cause a professor to be interrogated and if not tenured, could have their position threatened. Imagine if your job hinged on yielding a perfect score on your productivity report each year. While this is desirable, it is somewhat unattainable, especially continuously. As becomes clear from this discussion, the foundational issue is difficult to address: what criteria measures if a student got their monies worth at a particular institution versus if they had spent time at another?

Academic Freedom: the Tenure System

The emergence of the research university only complicates this already tangled tale. According to Naomi Schaefer Riley, the research university arose in the late nineteenth century having two distinct characteristics: academic freedom for professors and of course, a research orientation for faculty. This meant that instead of simply

teaching, professors were also expected to create new knowledge (Riley, 2011, 23-24). The idea of 'academic freedom'- assurance that teaching will happen free of administrative or government- seemed promising to many university faculty members (Ginsberg, 2011, 131). However, the monumental firing of a Stanford professor in the late 1890s over conflicting political views with the university proved that professors needed to be just as careful as any other worker when performing their jobs (Ginsberg, 2011, 140). Dissatisfied with this, professors united to form the American Association of University Professors and in doing so fought to establish the tenure system as it is known today (Ginsberg, 2011, 141-142). The need for the tenure system was also enforced by the changing composition of leadership within colleges after the Civil War. Since college enrollments rose substantially during this time, a new type of leadership was needed: instead of part-time trustees and administrators, full-time staff members were needed to be able to respond to these changes. Particularly, these new leaders should be versed in the ways of management and entrepreneurship to grow revenues by further growing enrollments (Ginsberg, 2011, 148-149). This change from leadership to management of the university is what brought about the corporate university, "To advance their institutions' interests, they recruited eminent professors, emphasized research, designed beautiful campuses, sought to build athletic teams, and turned to corporate public relations techniques to polish their schools' images" (Ginsberg, 2011, 149). All of the techniques Ginsberg lists represent some of the factors that many believe are responsible for the incredible rise in tuition over the last few decades: over paid faculty, white- elephant buildings and construction projects, and exorbitant marketing.

The bridge between the tenure system and the inability to produce comparable feedback is that the tenure system was, in part, a response to the ambiguity of input and output information. The tenure system builds a firewall against the firing of a professor simply because school administration or government did not approve of their syllabus or personal views. However, this is because it is hard to judge the effectiveness of a math professor as a factory worker's productivity can be judged. Whether the tenure system is beneficial or harmful to a university's teaching output is ambiguous- just like the quality inspection of a professor.

Chapter 3

The University Today

Due to the uncertainties inherent in the production of educational services and the asymmetric information between student and faculty, it is difficult to understand exactly how to go about providing excellent service for each student. In order to understand the costs associated with higher education it is important to understand the nature of the institution. There are two further characteristics of the university system that one should understand in order to properly analyze what is happening within higher education: the corporate university and the status of faculty.

The University as a Corporation

Once in a galaxy far, far away, universities were humble places of limited meal options, study rooms instead of computer lounges, homey dorms, and century's old buildings. Today universities function more like corporations than schools, offering extensive food choices, excessive technologies, luxurious dormitories, and newfangled buildings that seem to pop up overnight like weeds. On the list of items that increase university costs, high-profile faculty members, fancy facilities, and low-student-to-teacher ratios, top out as the most erroneous (perhaps) and the most expensive (Surowiecki, 2011). Such is the changing culture of academia. In her book, *The Faculty Lounges*, Naomi Schaefer Riley says that the U.S.'s warm feelings towards college have ceased in the midst of risky investment strategies, gourmet food, and elaborate work-out facilities (Riley, 2011, 6). In this sense, the university is really a pseudo-corporation. It

fronts a very nice cover, but looking more closely at the guts of the book, it is evident that were the university a real corporation, it would fail miserably.

In his book *The Knowledge Factory*, Stanley Aronowitz argues for understanding the university as a major corporation as a fact rather than an analogy. Instead of being the picturesque place of romantic scholars and strict monks, these institutions have become endowment seeking institutions which regularly construct buildings and pays their CEOs (presidents) large sums of money (Aronowitz, 2000, 11). First, these institutions have no established bottom line. In the business world, this is a fairly easy goal to communicate, but colleges have more difficulties in determining what their end results should be. It may be evident by a mix of factors that they are successful, but they will never know if this success could be maximized or if the results they achieve are truly the best given the resources available. This is mainly because there are no universally accepted criteria to put a grade on the quality of graduates (Vedder, 2012; Vedder & Denhart, 2012). In a business, quality is often assessed by the TQM department to assure that just the right mix of raw materials go into the product or service created to guarantee excellence and prevent wasting resources. While it is easy for companies to run quality inspections and assess overhead costs, it is much harder for a university to do so without any clearly defined metrics (Vedder, 2012; Vedder & Denhart, 2012). This makes it hard to control costs since institutions do not know where to cut funds or allocate more to improve the value of their product. Run largely by administrative managers, the contemporary university is judged by self-defined criteria. Thus, “excellence means that all of the parts of the university ‘perform’ and are judged according to how well they deliver knowledge and qualified labor to the corporate economy and how well the administration fulfills the

recruitment and funding goals needed to maintain the institution” (Aronowitz, 2002, 158).

Even if quality could be determined, ambiguous leadership will make it difficult to achieve anything. Between the board of trustees, the president, high-profile alumni, and numerous deans or head administrators, there is no clear cut head of the university system (Vedder, 2012; Vedder & Denhart, 2012). While the leadership of a university is made up of many diverse people with educated backgrounds, their knowledge and positions often make it hard to agree on a course of action. If the university president wants to spend more money to enhance a particular program to entice prospective students and improve the reputation of the university, trustee members may be hesitant to disagree though their business backgrounds think otherwise (Ehrenberg, n.d.). There are also too many parties within the university that can hold up effective resource allocation (Vedder, 2012; Vedder & Denhart, 2012). If some resources in the business school are not being used by students and faculty, but the medical school requires extra resources, it would seem logical to allow the medical school use of the business school’s excess resources. However, if the head of the business school decides not to share, then the medical school must use university funds to acquire new resources. These petty territorial issues and the intense specialization of capital equipment lead to a loss in efficiency that is felt in other areas of the university. The same is true for faculty members: if 6 out of 10 tenured medical faculty members are not being utilized to their fullest extent to teach and the business school needs extra faculty members, the medical faculty cannot simply fill the extra needs of the business school. Inflexible resources lead to inefficiencies and waste (Vedder, 2012; Vedder & Denhart, 2012).

However far the modern research university has traveled from its roots in an institution devoted to public service, the fact remains that the university is NOT a corporation, no matter how it may try to fool the public. If it was, it would have failed miserably by simple business rules. Simple economics and the law of demand suggest that as pricing goes up, student enrollment should drop (Hughes, 2011). This is not the case however because higher education in any form has become more of a necessity than a luxury. Students will always be attracted to large, prestigious colleges not only for their size and reputation, but for the wealth of activities and opportunities thought to exist there. Universities know this and, in order to bump up the amounts in their expense accounts, they choose to drive up prices while carelessly managing expenses.

How the Faculty Fit In

Being that a university is an institute of learning, the greatest influence on the institution should then come from those actually doing the teaching to facilitate the learning: faculty members, professors of all ranks who are in contact on a day to day basis with eager students. Many deny that this is the case in today's society.

Naomi Schaefer Riley also argues that the tenure system, a universally accepted method that was installed to ensure professors had a voice in the university and was supposed to lead to better quality teaching, actually destroys the quality of education an institution provides (Riley, 2011, 12 & 20). This principle of academic freedom is debatable and is the cause of complications within the tenure system. It is hard to define exactly what academic freedom is and when it is being infringed upon, so this argument

is very subjective (Riley, 2011, 26). The tenure argument fits into higher education's inflexible resources. Going back to the excess professors, if 6 out of 10 tenured medical school professors are being utilized to teach a full schedule in a given semester, 10 out of 10 tenured medical school professors are still being paid their full salaries. This creates a loss of monetary resources as well as human resources. The tenure system allows this to happen since it removes a need-based employment system: faculty can not be let go if they are no longer needed.

Chapter 4

Causes for Tuition Increase

There are many arguments that attempt to explain exactly why the price of a college diploma costs so much. A very simplistic answer is that colleges are simply holding students more financially accountable for funding an institute's operations. A *New York Times* article reports that student tuition and fees today account for 36% of an institution's revenue, which has increased from only 24% in 1983 (Folbre, 2009). There are many more complicated factors that popular culture and scholars blame for the soaring cost of tuition.

“Frills”

“Frills” can be looked at from an institutional perspective and a student perspective. In the opening of the National Association of State Universities and Land-Grant Colleges' document on college affordability, the group claims that students do have choices when it comes to higher education. Not only do they have the option to choose a more “affordable” post-secondary institution, they also have the choice to make their college lifestyle “affordable”. The report suggests completing a degree in 4 years, choosing on-campus housing, and living an overall modest lifestyle. While living a modest lifestyle is certainly the goal, if a student pays \$15,000 a semester, all other expenses seem trivial in comparison. Most students do not make it a first priority to rack up more debt by staying in college past the traditional 4-year term. However, due to

constraints within the universities system, it is hard for some to do so especially if they have changed their major even just once. Most colleges make switching majors as easy as blinking, assuring students that they will not be punished for at the age of 17 or 18, being unsure of the exact path of their future. Yet when most college students seek counselor's assistance to change their intended major, they are met with another semester or two of work. Even if a student does not switch majors they could still be subjected to additional semesters due to poor counseling in trying to navigate degree requirements. Sometimes counselors assigned to students know just as much as the student does about scheduling and degree completion. Others are just not good at advising students, though they are wonderful professors. The National Association of State Universities and Land Grant Colleges should also consider that the population at most member universities would decline significantly if all high school seniors chose to attend a more "affordable" university.

Conversely on the institutional side, some claim that the extra "frills" associated with the corporate university today add immense expenses to their budgets. These include incredible fitness facilities, gourmet food, and newly constructed buildings with the latest 'learning' gadgets (Aronowitz, 2000, 11 & Riley, 2011, 6). Some claim that institutions feel pressured to demonstrate the quality of their institutions by providing such state-of-the-art features (NASULGC, 2008). From a marketing perspective, it is true that a consumer will often judge the quality of an item based on price compared to its competitors. Thus a TV priced at \$400 is deemed to be of better quality than a comparable TV priced at \$250. This again moves post-secondary institutions into the category of business, not education. If these institutions truly wanted to stand out as

education institutions, they should let their service speak for itself instead of dangling the size of their fitness centers or the variety of their dining facilities in front of prospective students. On the other hand, some of these “frills” are often not paid for with student tuition. Tuition, in the context of this report, does not include the amount of money students pay for room and board or other fees. That being said, it is unfair to say that better quality food and housing causes tuition to increase since these services are not paid for with tuition. They are instead funded by a room and board fee paid by students who live on campus and/or have on-campus meal plans (some universities have special housing options in which students can choose on-campus housing without purchasing a meal plan). Gym facilities too are often maintained and staffed by charging students an additional fee to use the facilities on a semester or yearly basis. The funding of modern, newly constructed buildings on the other hand, comes directly from tuition dollars. Some will argue that the construction is often initiated and funded fully by alumni or donors who want their name immortalized on campus, thus the contribution they make to the university offsets the costs of construction. Building a facility of such size probably costs at least \$20 million and even that is quite a modest estimate. It is true that contributions do assist in the cost of building, but the \$5 million donated certainly does not help much to offset the \$20 million total costs. Besides the initial costs of building, each facility must be equipped with electricity, plumbing, and furniture. Additionally, it must be maintained as it ages, incurring labor and supply costs in the process. All of these factors contribute to long-term costs associated with use. Therefore, even if one does argue that a single alumnus donated all \$20 million to build an on-campus palace in their name, it is unlikely they will contribute money in the future for upkeep.

Rankings and ratings are also important to most, if not all institutions. This often skewed data is simple to look at and easy to analyze for busy prospective students and parents who do not have time to do extensive, in-depth research on each of the schools they are interested in attending. These lists are often compiled using superfluous data with superfluous relevance. They are nonetheless highly significant in distinguishing one university from another.

Changes in Government Funding

Since many institutions receive funds from the government, any downward fluctuation causes a stir within these institutions. Over the last 20 years, government funding has decreased significantly and thus is often the first, and most accentuated factor associated with tuition hikes (Folbre, 2009). However, there are two very contrasting sides to this argument. One side obviously claims that the loss of government funds causes tuition to spike: The National Association of State Universities and Land-Grant Colleges claims that though the cost to educate a student remains unchanged, institutions have to compensate for decreased government funding, which is why tuition continues to increase (2008). Yet others argue that increased government aid actually supports tuition hikes. In fact, the theory is so popular that it has become known as the “Bennett Hypothesis”, after former U.S. Secretary of Education William Bennett, and interestingly enough is acknowledged and supported by both Democrats and Republicans (Strauss, 2012). The theory behind the theory is that colleges believe increases in government aid increases price elasticity of tuition. They feel that if students are receiving more money in

grants and aid, then raising tuition prices probably will not matter much, so they take the opportunity to rake in more money. In the last four years, the Obama administration expanded the Pell Grant program by \$1.5 billion. Supporters of the Bennett Hypothesis might suggest that the surge in tuition is a direct result of this additional aid (Weissman, 2012). However, studies have shown that the correlation between rising tuition and rising government aid is too ambiguous to prove absolute interdependence. Only the tuition rates at for-profit schools were found to have a positive correlation with increased aid (Leonhardt, 2009).

Faculty Expenses

Amidst all of these factors, the faculty surely earns its place as a scapegoat for rising tuition. This particular factor is interesting because many explanations exist for its possible connection to tuition prices. Probably the most common is that universities believe it most appropriate to attract ‘the best’ experts by offering competitive salaries (Frank, 2012). Another idea suggests that professor productivity has not improved since 1980 but schools still have to maintain salaries aligned with today’s market conditions. In this case, productivity is measured by student-to-faculty ratios, which are about the same today as they were in 1980 (Surowiecki, 2011). Universities are then in effect paying more today for the same output they achieved yesterday for less. Yet, as one author points out, higher education institutions cannot be run using machines (Vedder, 2012). In other lines of business, if the cost of labor becomes increasingly expensive, companies can consider using technology and machines to replace an actual person for

less money. Though substituting live professors for poly com lectures has increased in popularity, even these would be impossible without at least one flesh and blood faculty member. No university can function without people. Thus in an era where outsourcing has become the norm due to increases in the cost of labor, universities are incapable of adopting this practice and therefore have no choice but to increase their prices.

Another argument against the faculty is that university leadership has a skewed view of their real “customers”. Instead of aiming to please students and parents paying for their services, college presidents find it more acceptable to appease other parties such as alumni, trustees, and faculty (Vedder & Denhart, 2012). This leads to high salaries, research bonuses, and better benefits packages. More universities are also trying to meet economic needs by supporting education in areas like health care, technical training, and engineering. Not only is funding the actual curriculum expensive, but professors in these professions tend to be in higher demand so they can demand higher salaries (“Where the jobs are”, 2012). Therefore, to place these highly desirable experts on their faculty roster, universities must be willing to provide the best salary and benefits packages in comparison to their rivals. This increased spending on highly paid professors is thought to increase university prestige and the quality of education, all at the student’s expense (Leonhardt, 2012). The inflexibility of the faculty is also scrutinized as a failure in effective resource allocation. Tenured faculty can not be moved to areas that demand more professors, nor can they be removed if demand drops (Vedder, 2012). So again, universities pay for an input that is not necessarily contributing to the production of an output.

A Legitimate Scapegoat?

Many sources deny that faculty expenses could be the culprit behind tuition hikes, such as The College Board's study, *Trends in College Pricing*. The study shows that compensation in all but public colleges has decreased. Salaries also decreased in the 4 year public and private sector and remained the same in the 2-year public colleges, while tuition has increased over time in all except public 2-year colleges. At the same time, full time instructional staff has decreased in the public and private sector over time, which could explain these decreases in compensation (CollegeBoard, 2012).

Another study done by the Delta Cost Project looked at expenses and revenues to attempt to uncover tuition dollar allocation. The study ranks expenses at 4-year public universities from highest to lowest in the following categories:

1. Instruction
2. Research
3. Academic Support
4. Institutional Support
5. Operations and Maintenance
6. Public Service
7. Student Services

While Instruction does top the list, over the last 10 years, Instruction expenses have only gone up 9.9% as compared to increases in Research by 22.1% and Operations and Maintenance by 20.2%. In fact the study found that faculty compensation spending has either decreased or remained steady over the last 10 years, similar to The College

Board's findings (Delta Cost Project, 2011). This suggests no correlation between faculty expenses and tuition rates. Even Naomi Schaefer Riley, a popular writer and expert on education issues, who abhors the tenure system, admits that faculty is not the only instigator of rising prices. Instead, she cites "expanding bureaucracies, luxurious facilities, remedial education, and a third party-payer system" as more likely factors (Riley, 2011, 6).

Chapter 5

Hitting Home: Tuition Rates and Expenses at Penn State and the Big Ten

To give perspective to all of this theory, we will analyze data from the Big Ten schools and Penn State. Many Big Ten schools often top the lists of the most expensive colleges and universities, but Penn State routinely places high on each list. In 2010, Penn State came in at number 2 in the Huffington Post's list of the most expensive Big Ten schools ("The most expensive", 2012). In June 2012, Penn State made another appearance in the Huffington Post as well as in USA Today as the most expensive public 4-year college in the United States (Armario, 2012 & "Public 4-year colleges", 2012). These costs were blamed on a 19.6% cut in state related funding over the past year, the effects of which are debatable as mentioned earlier. The rising cost of Penn State tuition, on the other hand, is indeed an indisputable topic-tuition has most definitely increased over the last 10 years.

The Big Ten

Since Penn State is the ultimate institution under consideration, comparisons within the Big Ten schools will yield a fairly accurate representation of expenses, tuition rates, etc, given the time and resource restraints that are present during this study. All data was obtained from the Delta Cost Project's *Trends in college spending: 1999-2009*. Figure 5.1 shows Instruction expenses which are believed to include faculty expenses in

their total. No explanation for expense categories could be found. An email was sent to the Delta Cost Project for clarification, but a response was not received. Though the data only covers 2004-2009, it is still interesting to capture a snapshot of expenses at a similar group of universities such as the Big Ten. Instruction expenses do not increase much in this time frame. At some schools such as the University of Wisconsin, Ohio State, and the University of Nebraska, it appears that instruction expenses decrease in some periods before increasing in the future. It would be hard then to attribute faculty expenses to a rising tuition rate since it is obvious that tuition rates have not decreased much over the last 10 years.

Instruction Spending within the Big Ten Schools

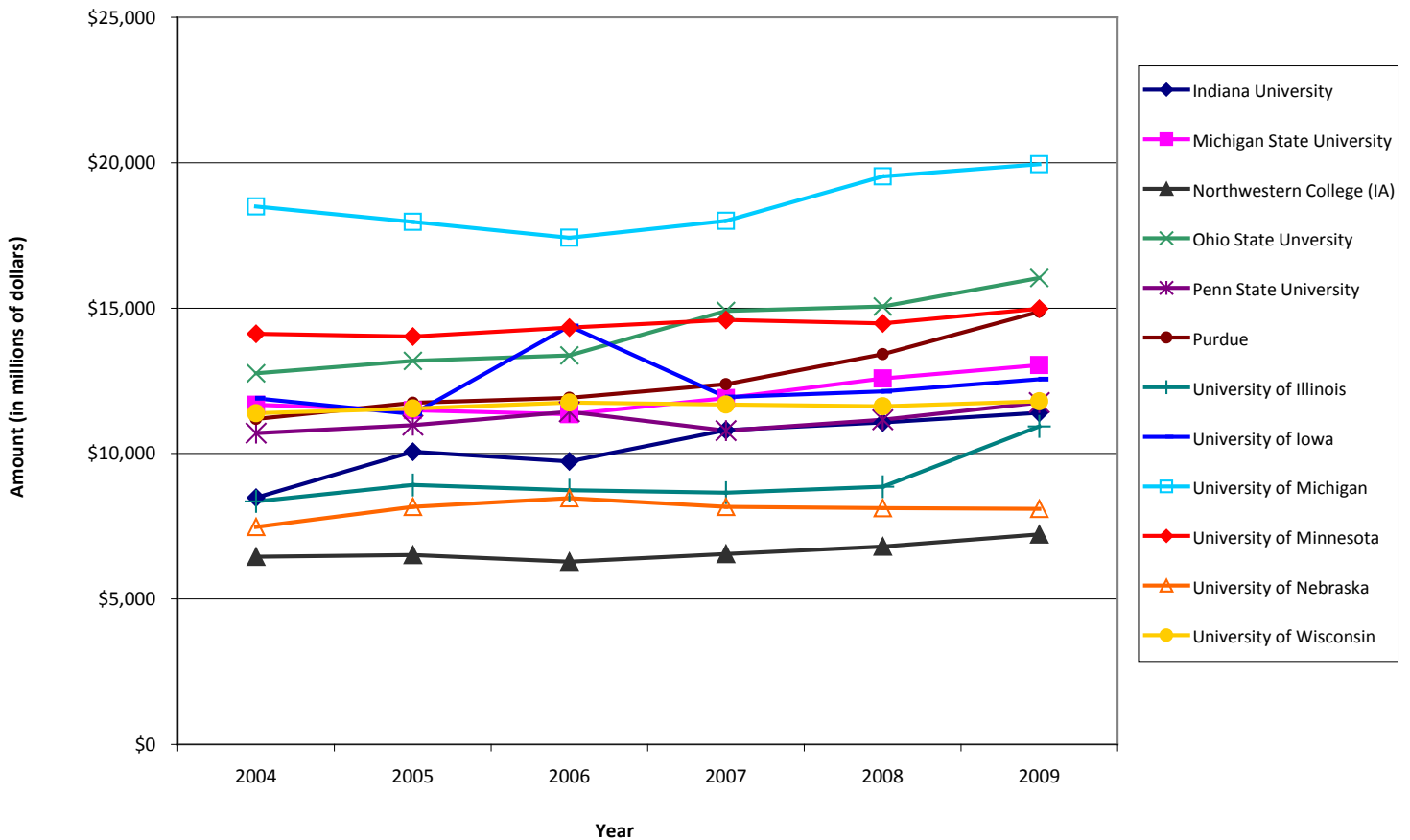


Figure 5.1

Penn State: Expenses

The Right to Know Act of 2008 makes it possible to view and analyze Penn State's audited financial statements online between the years of 2000-2011 (Corporate Controller's Office, 2001-2011). Some items in these statements were not included in the analysis or needed to be adjusted to correctly interpret the statements. The Hershey Medical Center (HMC) has been deleted from all revenues and expenses since it is self-sustaining; the Medical Center is not funded by tuition dollars, nor does it give money to the school for academic purposes. Auxiliary Enterprises was also removed from our calculations for similar reasons. Services in Auxiliary Enterprises include Dining and Food Services, the University Park Airport, and the Nittany Lion Inn and Penn State hotels and conference centers, among others. The percentages for each expense category were then recalculated based on the new total amount of expenses without considering the HMC or Auxiliary Enterprises. Penn State's expenditures from 2000-2011 in total dollars are shown in Figure 5.2.

It is clear that Instruction is the highest expense category in the budget not only in dollar amounts, but also in percentage amounts. However, instruction was not the only expense to increase over the past 11 years. All expenses seem to increase at a steady rate, Research being the second largest after Instruction. It should be noted that Student Aid was not included in the financial statements after 2006. The 2007 financial statements only say that certain items within the statement of activities were reclassified to conform to the 2007 presentation of the Commonwealth of Pennsylvania (Penn State Corporate Controller, 2007). No further explanation is noted.

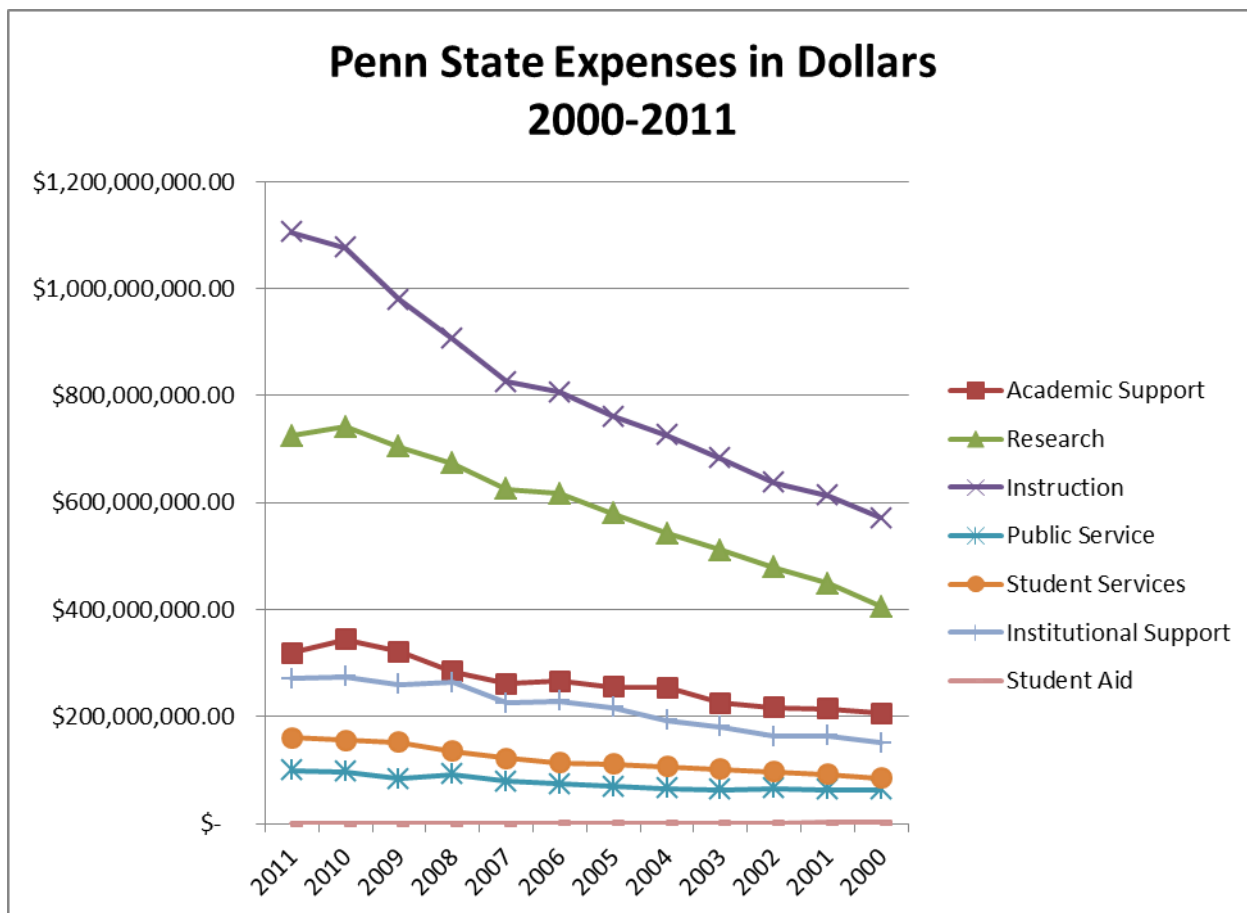


Figure 5.2

Penn State: Faculty Salaries

Each year, the Penn State University Faculty Senate releases a report regarding faculty salaries at University Park. The report shows mean salaries for faculty in all of the academic colleges by ranking (professor, associate, assistant). Some limitations do exist for each data set and are noted below each graph. The University Faculty Senate meeting minutes for each report's month of release as well as the report itself have been examined

thoroughly to attempt to explain the absence of data for particular years and for particular colleges. No explanation was found to explain why some data was unavailable.

It is clear that faculty ranking as Professors have higher mean salaries than those ranking as Associates or Assistants. Regardless of the ranking, all of the salary data provided pertains only to full-time employees. As defined by the Office of Human Resources, a full-time-equivalent employee (FTE) is defined as:

“One hundred percent full-time equivalent (FTE) appointments are those which are scheduled for 12-months a year, 40-hours per week. Appointments scheduled to work fewer months per year and/or fewer hours per week may be established also.” (Penn State Office, 2012, p. 7).

The description goes on to say that each dean or administrative officer of each college will determine and assign responsibilities to each employee as they see fit as long as they follow university policy. Each dean or administrative officer also has control over the employee’s job title, description, pay grade, and salary range (Penn State Office, 2012, p. 7).

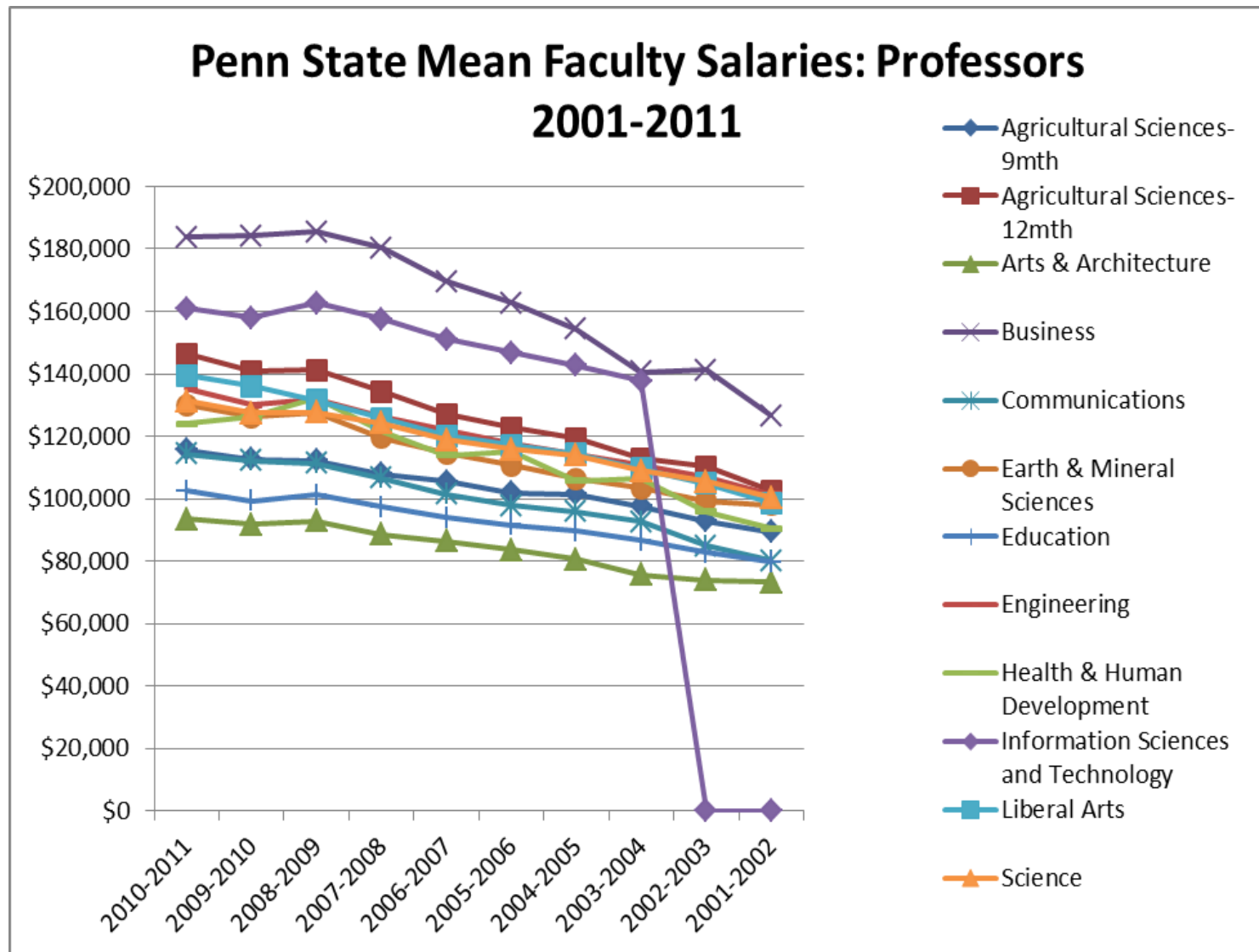


Figure 5.3

Notes:

- School of Nursing not included; Average salaries are not recorded for rankings with 3 or fewer full-time equivalents (FTEs)
- Information Sciences and Technology excluded from graph, 2001-2003; information not available
- Information from Penn State University Faculty Senate salary tables and reports (2005-2012)

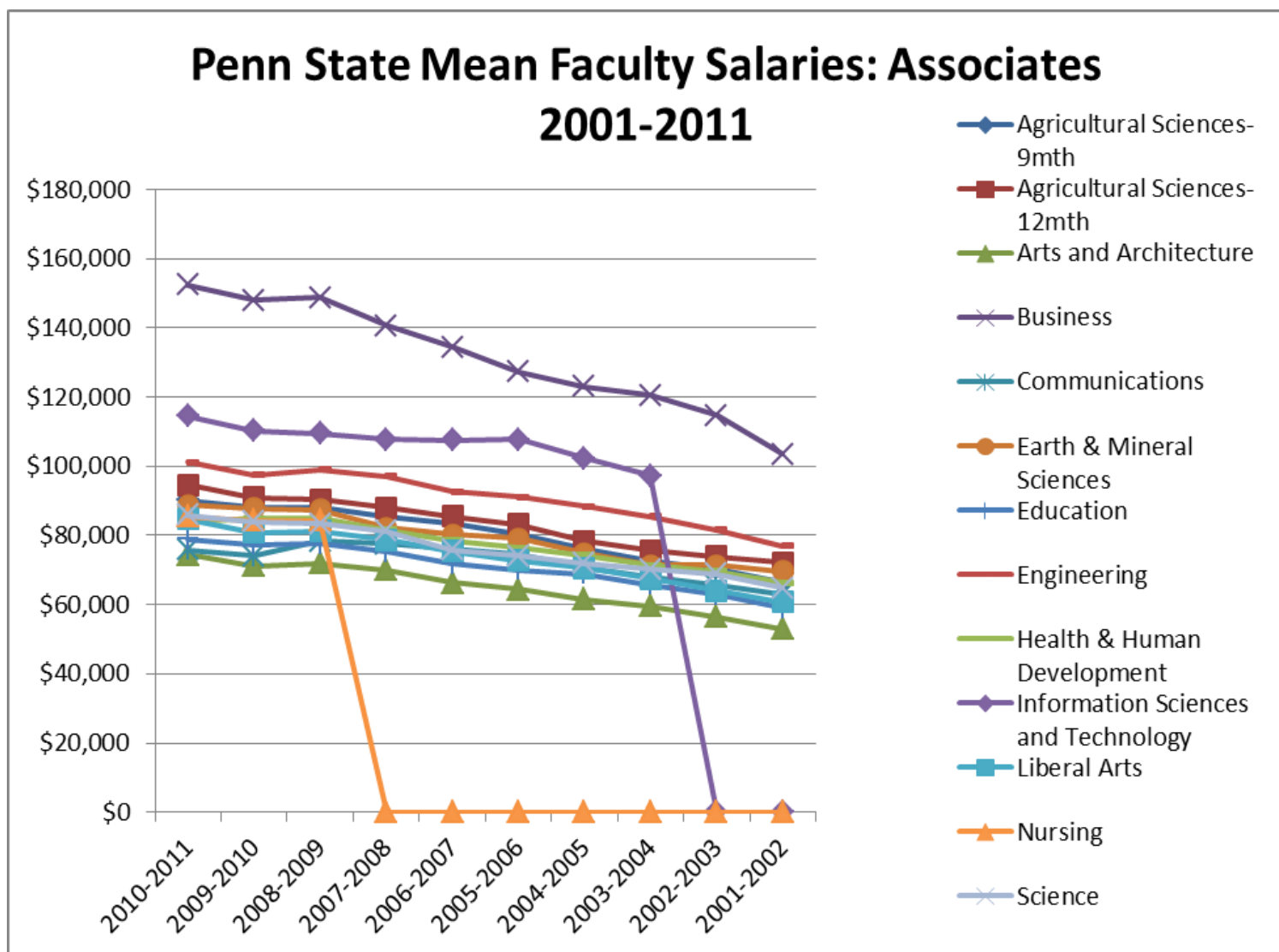


Figure 5.4

Notes:

- Nursing excluded from graph 2001-2009; information not available
- Information Sciences and Technology excluded from graph, 2001-2003; information not available
- Information from Penn State University Faculty Senate salary tables and reports (2005-2012)

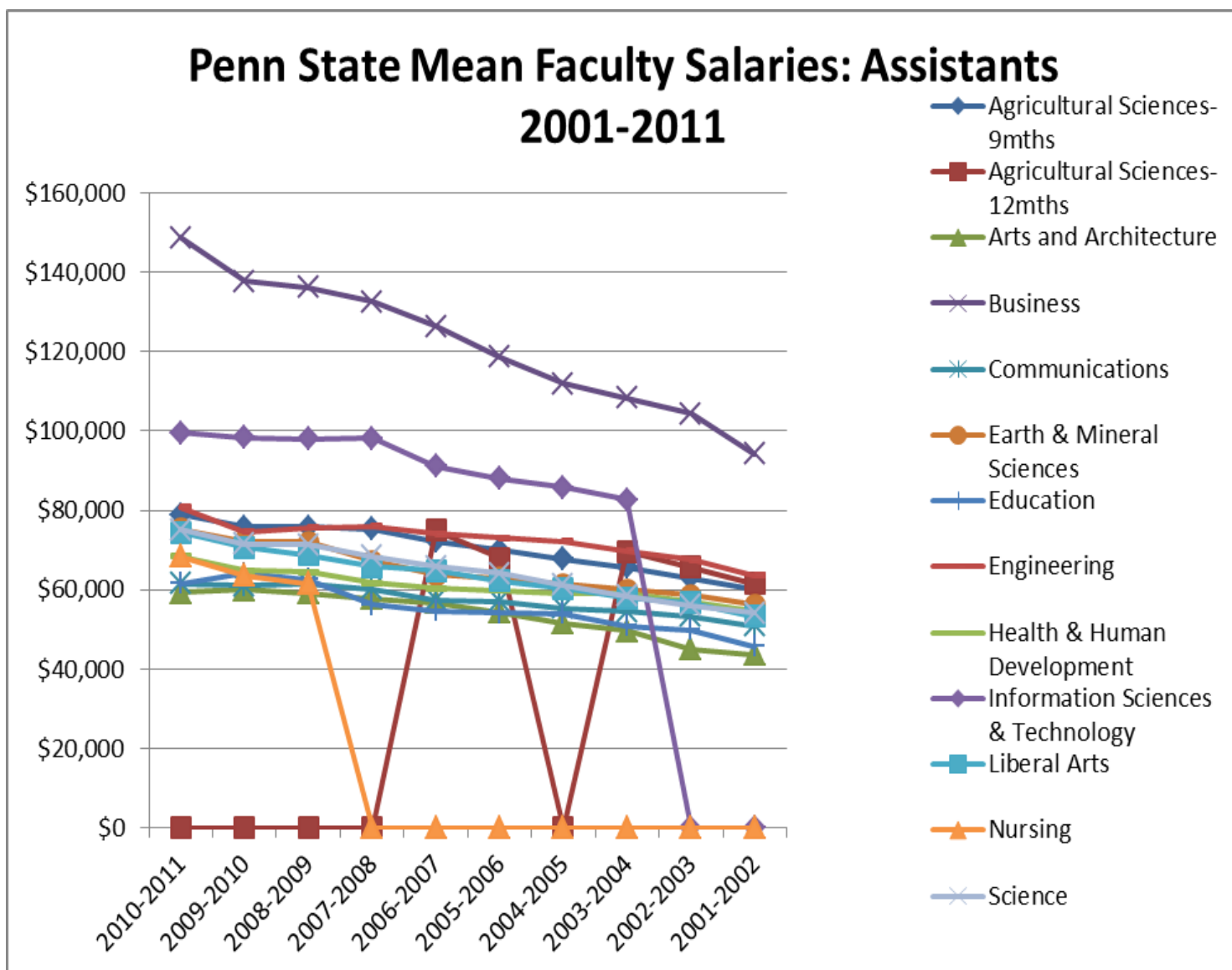


Figure 5.5

Notes:

- Agricultural Sciences- 12mth (2010-2011; 2009-2010; 2008-2009; 2007-2008; 2004-2005)- Average salaries are not recorded for rankings with 3 or fewer full-time equivalents (FTEs)
- Nursing excluded from graph 2001-2008; information not available
- Information Sciences and Technology excluded from graph, 2001-2003; information not available
- Information from Penn State University Faculty Senate salary tables and reports (2005-2012)

Penn State: Tuition Rates

Penn State's tuition rates over the last 10 years have been captured and are presented in Figure 5.6. Since Penn State creates separate tuition rates based on academic year standing, state of residence, and academic college, a singular number was created by averaging all the full time tuition rates of the academic colleges for Pennsylvania and Non-Pennsylvania residents separately based on academic standing. These numbers were then multiplied by the population of students in each category to calculate a single weighted average tuition for each academic year. The formula used in this calculation is provided in Appendix E. Rates for international students were not used in calculations.

Over the past 10 years, it is obvious that tuition has risen sharply, while dipping slightly from 2006-2008. Tuition rose 37% between 2008 and 2009. After 2009 it

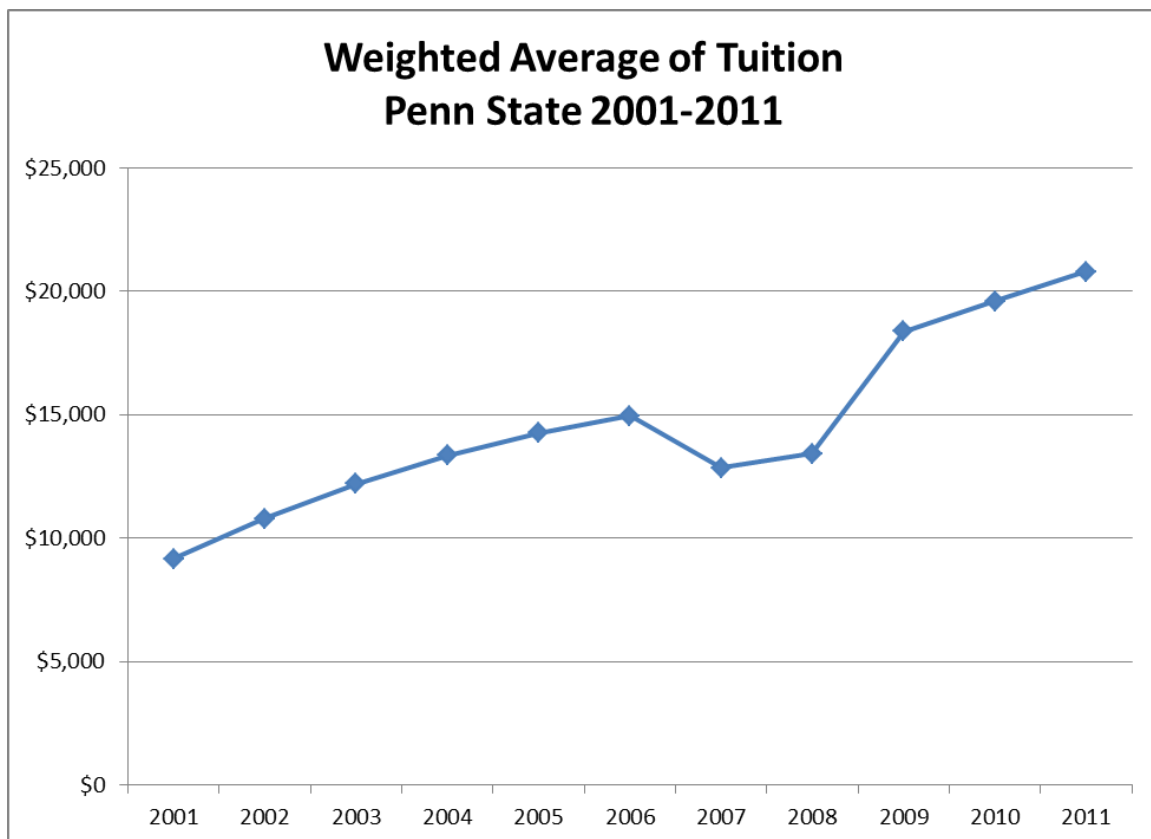


Figure 5.6

increases at 7% per year. Clearly Penn State is not immune to the exponential tuition epidemic.

Establishing a Correlation

A correlation coefficient between average salaries of each faculty category and the average tuition during 2001-2010 was calculated. A coefficient was also computed for the change in tuition and the change of annual salary for each faculty category from the years 2001-2010. The results are shown in Table 5.1.

Tuition to Faculty Salaries		
Assistant	0.874	
Associate	0.855066	
Professor	0.818181	
Percent Change in Tuition to Percent Change in Faculty Salaries		
Assistant	0.049234	
Associate	-0.1577	
Professor	-0.15113	

Table 5.1

Average faculty salaries were calculated by averaging the annual salaries for all academic colleges within each faculty category. Change in tuition and change in faculty salaries was found by using a percent of change formula to compare the percent of annual change in tuition and salaries.

Though the correlation between tuition and faculty salaries is strong, there appears to be little connection between the annual percent of change in tuition and the annual percentage of change in salaries. The fact that there is little relationship between the annual changes of each suggests that both increases are independent of the other. The

strong correlation between annual tuition and annual salaries is easily explained: any two sets of data where one (faculty salaries) is a large component of the other (tuition) will show a positive correlation, and therefore appear to be dependent data sets. While it does confirm that salary expenses increase as tuition increases, it does not establish a direct causal relationship between the two. That the changes in faculty salaries are weakly or negatively correlated to changes in tuition suggests other factors besides faculty expenses influence tuition rates, but few of these factors can be accurately quantitated.

Apart from the correlation coefficients, the data shown in Figures 5.1 and 5.2 reveals some clues about the relationship between tuition and faculty expenses. Figure 5.2 shows an annual increase in Instructional expenses in each of the last 10 years, of which faculty salaries are thought to be a part. The Big Ten analysis shown in Figure 5.1 shows very little change in Instructional expenses over the last 10 years, though we know tuition has increased at each of these schools during the same period of time. In addition, as seen in Figure 5.2 of the Penn State analysis, there are more expenses affecting tuition than just instructional expenses.

Aside from the numbers, the limitations of this thesis allow too much room for error to be certain that a correlation definitely exists. Since only average faculty salary rates could be obtained throughout the past 10 years and not a total amount representative of the money paid out to faculty each year, it is hard to establish how much faculty expenses actually were. Also the data provided by the University Faculty Senate only takes full-time faculty members into consideration. It is unlikely that part time faculty members receive salaries akin to full time faculty, and therefore using only full time faculty salaries as a sample group is not necessarily an accurate representation of the

entire faculty population. Explanations about Penn State's financial statements would also need to be answered in order to gain a clearer picture of tuition allocation. The Penn State Corporate Controller's office was contacted twice in response to this need, but declined to respond in a timely fashion. Considering all of this, it would not make sense to boldly establish a strong correlation between faculty expenses and tuition rates at this time.

Chapter 6

Conclusion: Where Do We Go From Here?

Even with the correlation coefficients calculated between Penn State's various faculty categories and tuition, it is still difficult to establish a clear relation using the data obtained for this thesis. The hope is that the research provided here will open the door for more discussion and further investigation of this topic. A college education is still an important differentiating factor between levels of income and standards of living. A college diploma is a market commodity just like any other product or service available to consumers, yet very little is known about the quality of the inputs producing the outputs. The state of higher education hinges on the ability to evaluate these outputs. By looking at data from the Big Ten schools and Penn State it is clear that multiple factors contribute to tuition expenses, yet the numbers are not transparent enough to provide a clear answer on what specific factors affect tuition the most. Information gaps were attempted to be reconciled, but neither party responded in time to complete this analysis.

As tuition continues to explode throughout the U.S., the usual scapegoats will be employed to support its increase. The only way to prevent these false accusations in the future is to call for increased transparency and more documentation to verify and evaluate the allocation of tuition dollars.

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APPENDIX A: ENROLLMENT NUMBERS 2001-2011

Fall Semester Total Headcounts Enrollment - Baccalaureate

Fact Book plus

(Click on College for Department and Major)

[*Campus][*Semester][*College/Dept/Major][Baccalaureate][Undergraduate][*First Time][*Race/Ethnicity][*Gender][Full Time][*County/State][Non-Pennsylvania][*Adult/Non-Traditional][*Age Range][*GPA Range]MEASURES

Student Count as values		Fall 2011	Fall 2010	Fall 2009	Fall 2008	Fall 2007	Fall 2006	Fall 2005	Fall 2004	Fall 2003	Fall 2002	Fall 2001
University Park	Freshman	3552	3151	2664	2591	2313	2733	1996	2046	2181	2098	2213
	Sophomore	3129	2728	2513	2348	2582	1925	1946	2039	1944	2071	1707
	<i>Lower Division</i>	6681	5879	5177	4939	4895	4658	3942	4085	4125	4169	3920
	Junior	3141	2953	2738	2956	2214	2202	2258	2232	2293	1944	1777
	Senior	2916	2593	2798	2021	2050	2145	2136	2311	2059	1879	1882
	<i>Upper Division</i>	6057	5546	5536	4977	4264	4347	4394	4543	4352	3823	3659
	<i>Total Baccalaureate</i>	12738	11425	10713	9916	9159	9005	8336	8628	8477	7992	7579

Fall Semester Total Headcounts Enrollment - Baccalaureate

Fact Book plus

(Click on College for Department and Major)

[*Campus][*Semester][*College/Dept/Major][Baccalaureate][Undergraduate][*First Time][*Race/Ethnicity][*Gender][Full Time][*County/State][Pennsylvania][*Adult/Non-Traditional][*Age Range][*GPA Range]MEASURES

Student Count as values		Fall 2011	Fall 2010	Fall 2009	Fall 2008	Fall 2007	Fall 2006	Fall 2005	Fall 2004	Fall 2003	Fall 2002	Fall 2001
University Park	University Park											
	Freshman	4197	4395	4250	5049	4892	5940	5059	4462	4490	4406	4530
	Sophomore	5057	5085	5866	5820	6534	5684	5222	5261	5223	5316	5254
	<i>Lower Division</i>	<i>9254</i>	<i>9480</i>	<i>10116</i>	<i>10869</i>	<i>11426</i>	<i>11624</i>	<i>10281</i>	<i>9723</i>	<i>9713</i>	<i>9722</i>	<i>9784</i>
	Junior	7406	8137	8063	8275	7307	7121	6986	7208	7327	7290	7272
	Senior	7939	7885	8161	7240	7077	7069	7148	7404	7499	7849	7790
	<i>Upper Division</i>	<i>15345</i>	<i>16022</i>	<i>16224</i>	<i>15515</i>	<i>14384</i>	<i>14190</i>	<i>14134</i>	<i>14612</i>	<i>14826</i>	<i>15139</i>	<i>15062</i>
<i>Total Baccalaureate</i>	<i>24599</i>	<i>25502</i>	<i>26340</i>	<i>26384</i>	<i>25810</i>	<i>25814</i>	<i>24415</i>	<i>24335</i>	<i>24539</i>	<i>24861</i>	<i>24846</i>	

APPENDIX B- MEAN FACULTY SALARIES 2001-2010

Department	2010-2011			2009-2010			2008-2009			2007-2008		
	Professor	Associate	Assistant	Professor	Associate	Assistant	Professor	Associate	Assistant	Professor	Associate	Assistant
Ag Sciences 9mth	\$115,595	\$90,094	\$78,848	\$112,681	\$88,040	\$75,835	\$112,097	\$88,143	\$75,741	\$107,949	\$85,413	\$75,354
Ag Sciences 12mth	\$146,391	\$94,514	N/A	\$140,685	\$90,922	N/A	\$141,164	\$90,367	N/A	\$134,231	\$87,996	N/A
Arts & Arch	\$93,537	\$74,389	\$59,300	\$91,827	\$71,186	\$60,024	\$92,913	\$71,927	\$59,060	\$88,457	\$70,060	\$57,698
Business	\$183,775	\$152,481	\$148,659	\$184,096	\$147,997	\$137,788	\$185,469	\$148,684	\$136,241	\$180,284	\$140,576	\$132,507
Comm	\$114,254	\$75,829	\$61,496	\$112,080	\$74,120	\$60,952	\$111,298	\$78,276	\$61,562	\$106,680	\$77,537	\$60,126
Earth & Mineral	\$129,933	\$88,820	\$75,372	\$126,218	\$87,854	\$72,121	\$127,578	\$87,507	\$71,979	\$119,511	\$82,148	\$67,268
Education	\$102,532	\$78,915	\$61,627	\$99,294	\$77,271	\$64,061	\$101,239	\$77,535	\$62,562	\$97,242	\$75,172	\$56,275
Engineering	\$135,091	\$101,132	\$80,715	\$130,083	\$97,462	\$74,631	\$131,690	\$98,990	\$75,681	\$126,210	\$97,033	\$75,996
Health & Human Dev.	\$123,935	\$84,030	\$68,371	\$126,123	\$84,816	\$64,887	\$132,174	\$84,862	\$64,455	\$121,650	\$81,566	\$61,690
Info Sci & Tech	\$161,069	\$114,416	\$99,538	\$157,951	\$110,216	\$98,371	\$162,585	\$109,416	\$98,050	\$157,596	\$107,761	\$98,200
Liberal Arts	\$139,501	\$84,698	\$74,477	\$135,985	\$80,808	\$70,598	\$131,472	\$81,160	\$68,719	\$125,728	\$78,755	\$65,787
Nursing	N/A	\$85,556	\$68,438	N/A	\$84,362	\$63,670	N/A	\$84,362	\$61,560	N/A	N/A	N/A
Science	\$131,357	\$85,828	\$75,147	\$127,335	\$83,943	\$71,534	\$127,696	\$83,265	\$71,381	\$124,196	\$81,199	\$68,444

Department	2006-2007			2005-2006			2004-2005			2003-2004		
	Ranking			Ranking			Ranking			Ranking		
	Professor	Associate	Assistant	Professor	Associate	Assistant	Professor	Associate	Assistant	Professor	Associate	Assistant
Ag Sciences 9mth	\$105,547	\$83,322	\$72,240	\$101,807	\$80,236	\$69,885	\$101,409	\$76,250	\$67,803	\$97,506	\$72,623	\$65,691
Ag Sciences 12mth	\$127,106	\$85,561	\$74,982	\$122,639	\$83,234	\$67,989	\$119,283	\$78,256	N/A	\$112,853	\$75,575	\$69,637
Arts & Arch	\$86,297	\$66,278	\$56,751	\$83,525	\$64,371	\$54,381	\$80,579	\$61,434	\$51,635	\$75,728	\$59,568	\$49,638
Business	\$169,573	\$134,459	\$126,389	\$162,634	\$127,286	\$118,638	\$154,382	\$123,104	\$111,842	\$140,530	\$120,547	\$108,348
Comm	\$101,499	\$76,201	\$57,410	\$97,881	\$74,540	\$57,149	\$95,787	\$70,788	\$55,370	\$92,514	\$67,864	\$54,450
Earth & Mineral	\$114,473	\$80,177	\$63,785	\$110,637	\$79,033	\$62,861	\$106,390	\$74,922	\$61,386	\$103,369	\$71,400	\$60,072
Education	\$93,881	\$71,815	\$54,646	\$91,512	\$70,015	\$54,101	\$89,599	\$68,942	\$54,049	\$86,636	\$65,847	\$50,903
Engineering	\$121,911	\$92,674	\$74,134	\$117,500	\$91,054	\$73,094	\$114,059	\$88,339	\$72,163	\$110,932	\$85,423	\$69,725
Health & Human Dev.	\$113,864	\$78,556	\$60,345	\$115,228	\$76,333	\$59,783	\$105,796	\$74,205	\$58,969	\$106,374	\$71,362	\$59,219
Info Sci & Tech	\$151,025	\$107,563	\$91,134	\$146,808	\$107,687	\$87,953	\$142,662	\$102,223	\$85,711	\$137,787	\$97,311	\$82,704
Liberal Arts	\$120,101	\$75,475	\$64,788	\$117,116	\$72,688	\$62,145	\$114,266	\$70,639	\$60,322	\$109,518	\$67,419	\$57,946
Nursing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Science	\$118,933	\$75,774	\$65,898	\$115,749	\$74,062	\$64,046	\$113,966	\$71,981	\$61,180	\$108,907	\$70,162	\$58,508

Department	2002-2003 Ranking			2001-2002 Ranking		
	Professor	Associate	Assistant	Professor	Associate	Assistant
Ag Sciences 9mth	\$92,749	\$70,398	\$62,987	\$89,390	\$66,419	\$60,093
Ag Sciences 12mth	\$110,308	\$73,819	\$65,657	\$102,595	\$72,199	\$61,573
Arts & Arch	\$73,860	\$56,516	\$45,117	\$73,182	\$52,906	\$43,692
Business	\$141,227	\$114,603	\$104,322	\$126,543	\$103,534	\$94,262
Comm	\$84,774	\$65,527	\$53,229	\$80,147	\$63,067	\$50,938
Earth & Mineral	\$99,292	\$71,449	\$58,616	\$97,928	\$69,550	\$56,249
Education	\$82,826	\$62,896	\$49,770	\$79,679	\$58,976	\$45,753
Engineering	\$106,969	\$81,652	\$67,579	\$101,324	\$76,911	\$63,600
Health & Human Dev.	\$95,876	\$69,698	\$56,940	\$90,398	\$66,266	\$54,749
Info Sci & Tech	N/A	N/A	N/A	N/A	N/A	N/A
Liberal Arts	\$104,942	\$63,918	\$56,722	\$98,560	\$60,721	\$53,267
Nursing	N/A	N/A	N/A	N/A	N/A	N/A
Science	\$105,418	\$68,830	\$56,119	\$100,384	\$64,858	\$54,110

APPENDIX C: BIG TEN INSTRUCTION EXPENSES 2004-2009

Instruction		2004	2005	2006	2007	2008	2009
Indiana University-Bloomington	Public Research	\$8,483	\$10,059	\$9,727	\$10,809	\$11,070	\$11,406
Michigan State University	Public Research	\$11,676	\$11,485	\$11,356	\$11,904	\$12,585	\$13,046
Northwestern College (IA)	Private Bachelor's	\$6,454	\$6,510	\$6,286	\$6,546	\$6,802	\$7,221
Ohio State University*	Public Research	\$12,762	\$13,187	\$13,376	\$14,903	\$15,058	\$16,042
Pennsylvania State University*	Public Research	\$10,700	\$10,974	\$11,441	\$10,792	\$11,166	\$11,752
Purdue University-Main Campus	Public Research	\$11,186	\$11,744	\$11,916	\$12,386	\$13,418	\$14,879
University of Illinois at Urbana-Champaign	Public Research	\$8,360	\$8,923	\$8,736	\$8,651	\$8,860	\$10,935
University of Iowa	Public Research	\$11,900	\$11,363	\$14,386	\$11,945	\$12,133	\$12,555
University of Michigan-Ann Arbor	Public Research	\$18,500	\$17,966	\$17,424	\$18,002	\$19,530	\$19,949
University of Minnesota-Twin Cities*	Public Research	\$14,119	\$14,020	\$14,331	\$14,599	\$14,480	\$14,980
University of Nebraska-Lincoln	Public Research	\$7,477	\$8,167	\$8,468	\$8,170	\$8,125	\$8,098
University of Wisconsin-Madison	Public Research	\$11,382	\$11,552	\$11,754	\$11,686	\$11,627	\$11,797

APPENDIX D: PENN STATE EXPENSES

Expenses	2011		2010		2009		2008	
	Dollars	Percent	Dollars	Percent	Dollars	Percent	Dollars	Percent
Academic Support	\$ 18,771,000	11.90%	\$ 344,587,000	12.81%	\$321,602,000	12.86%	\$ 283,954,000	12.06%
Research	\$ 725,306,000	27.07%	\$742,190,000	27.59%	\$ 704,017,000	28.16%	\$ 673,244,000	28.59%
Instruction	\$ 1,105,503,000	41.26%	\$ 1,076,891,000	40.03%	\$ 979,561,000	39.18%	\$906,308,000	38.49%
Public Service	\$ 98,965,000	3.69%	\$ 96,355,000	3.58%	\$ 83,188,000	3.33%	\$91,836,000	3.90%
Student Services	\$ 160,006,000	5.97%	\$ 156,034,000	5.80%	\$ 151,672,000	6.07%	\$ 134,974,000	5.73%
Institutional Support	\$ 270,982,000	10.11%	\$ 274,327,000	10.20%	\$ 260,391,000	10.41%	\$ 264,174,000	11.22%
Student Aid	\$ -		\$ -		\$ -		\$ -	
					\$			
Total	\$ 2,679,533,000	100.00%	\$ 2,690,384,000	100.00%	2,500,431,000	100.00%	\$2,354,490,000	100.00%

Expenses	2007		2006		2005		2004	
	Dollars	Percent	Dollars	Percent	Dollars	Percent	Dollars	Percent
Academic Support	\$ 261,816,000	12.24%	\$266,168,000	12.63%	\$254,959,000	12.78%	\$ 53,882,000	13.45%
Research	\$625,519,000	29.23%	\$ 616,707,000	29.27%	\$579,687,000	29.06%	\$ 42,657,000	28.74%
Instruction	\$ 826,097,000	38.61%	\$ 806,686,000	38.28%	\$760,735,000	38.14%	\$ 726,096,000	38.46%
Public Service	\$ 79,035,000	3.69%	\$ 74,148,000	3.52%	\$ 69,686,000	3.49%	\$ 65,429,000	3.47%
Student Services	\$121,785,000	5.69%	\$ 113,785,000	5.40%	\$ 11,348,000	5.58%	\$ 106,495,000	5.64%
Institutional Support	\$ 225,420,000	10.54%	\$ 229,027,000	10.87%	\$217,535,000	10.91%	\$193,001,000	10.22%
Student Aid	\$ -		\$ 756,000	0.04%	\$720,000	0.04%	\$ 602,000	0.03%
Total	\$ 2,139,672,000	100.00%	\$2,107,277,000	99.96%	\$1,994,670,000	99.96%	\$1,888,162,000	99.97%

Expenses	2003		2002		2001		2000	
	Dollars	Percent	Dollars	Percent	Dollars	Percent	Dollars	Percent
Academic Support	\$ 224,933,000	12.74%	\$216,454,000	13.05%	\$ 214,023,000	13.39%	\$ 205,655,000	13.85%
Research	\$ 510,622,000	28.92%	\$478,213,000	28.84%	\$448,544,000	28.07%	\$ 406,034,000	27.35%
Instruction	\$ 682,485,000	38.65%	\$637,532,000	38.44%	\$613,758,000	38.40%	\$570,733,000	38.45%
Public Service	\$ 63,782,000	3.61%	\$65,762,000	3.97%	\$63,656,000	3.98%	\$ 63,618,000	4.29%
Student Services	\$101,568,000	5.75%	\$97,037,000	5.85%	\$ 91,692,000	5.74%	\$ 85,464,000	5.76%
Institutional Support	\$ 181,168,000	10.26%	\$162,747,000	9.81%	\$164,511,000	10.29%	\$ 151,311,000	10.19%
Student Aid	\$ 1,135,000	0.06%	\$627,000	0.04%	\$1,945,000	0.12%	\$1,593,000	0.11%
Total	\$ 1,765,693,000	99.94%	\$1,658,372,000	99.96%	\$1,598,129,000	99.88%	\$1,484,408,000	99.89%

APPENDIX E: PENN STATE TUITION RATES

Year	Weighted Average Formula	Weighted Tuition
2011	$(15214 \cdot .25) + (17733 \cdot .41) + (27206 \cdot .18) + (30166 \cdot .16)$	\$20,798
2010	$(14412 \cdot .26) + (16897 \cdot .43) + (26276 \cdot .16) + (29134 \cdot .15)$	\$19,587
2009	$(13604 \cdot .27) + (15949 \cdot .44) + (25134 \cdot .14) + (27868 \cdot .15)$	\$18,389
2008	$(11008 \cdot .30) + (12177 \cdot .43) + (16798 \cdot .14) + (18083 \cdot .14)$	\$13,422
2007	$(10454 \cdot .33) + (12177 \cdot .41) + (15954 \cdot .14) + (18083 \cdot .12)$	\$12,846
2006	$(11646 \cdot .33) + (13076 \cdot .41) + (22194 \cdot .13) + (23807 \cdot .12)$	\$14,947
2005	$(11024 \cdot .31) + (12379 \cdot .43) + (21260 \cdot .12) + (22760 \cdot .13)$	\$14,251
2004	$(10408 \cdot .29) + (11172 \cdot .44) + (20336 \cdot .12) + (21199 \cdot .14)$	\$13,343
2003	$(9296 \cdot .29) + (10313 \cdot .45) + (18918 \cdot .12) + (20000 \cdot .13)$	\$12,207
2002	$(8008 \cdot .3) + (8699 \cdot .46) + (17236 \cdot .13) + (17933 \cdot .12)$	\$10,797
2001	$(7054 \cdot .3) + (7591 \cdot .46) + (15180 \cdot .12) + (15725 \cdot .11)$	\$9,160

ACADEMIC VITA
MARIE POPOVICH

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- EDUCATION** The Pennsylvania State University Class of 12/12
Smeal College of Business, B.S. in Accounting
International Business Minor
- HONORS
&
AWARDS**
- Schreyer’s Honors College, 8/11-12/12
 - Robert W. Koehler Excellence in Accounting Award, 2011-2012, 2012-2013
 - Rhodes Leadership Scholarship, 2011
 - Penn State Greater Allegheny Honors Scholar, 8/09-5/11
 - Girl Scout Gold Award, 2009
- RELEVANT
WORK
EXPERIENCE**
- Urish Popeck and Company, LLC, State College, PA 1/12/-4/12
Tax Support Intern
- Organized and sorted client tax data using Excel and DocIt to facilitate effective preparation of over 150 tax returns
 - Updated client account information by performing basic bookkeeping work to ensure superior service
 - Learned basic functions of an accounting firm by providing additional support as needed
- Highmark, Inc., Pittsburgh, PA 6/11-8/11
IT Audit Support Intern
- Provided senior management with data to determine IT spend allocation by preparing and presenting a financial report
 - Improved efficiency of care delivery and administration by compiling database of encryption- capable software
 - Increased efficiency of secure file transfers by providing research assistance with portable storage project
- LEADERSHIP
&
ACTIVITIES**
- Schreyer Honor’s College Career Development Mentor, 1/12-12/12
 - Penn State Residential Dining Student Sustainability Coordinator, 1/12-12/12
 - Beta Alpha Psi Pledge Class President, 9/11-12/11
 - Penn State Greater Allegheny THON Morale Captain, 12/10-2/11
 - Dedicated over 100 service hours as the Nittany Lion at Penn State Greater Allegheny, 9/09-5/11
 - Penn State Greater Allegheny Lion Ambassador President, 9/10-5/11
 - Orientation Leader Logistics Captain, 5/10-8/10
 - Penn State Greater Allegheny Lion Ambassador Vice President. 9/09-9/10
- INTERNATIONAL
EXPERIENCE**
- University of Sussex’ International Summer School, England- 6/12-8/12
 - Faculty-led leadership and professional development program, China- 5/11-6/11