

Following a Problematic, Yet Predictable, Path: The Unsustainable Nature of the Intercollegiate Athletics System

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“I think when we make it, we have a right to spend it. That’s the way America is.”
--- Mack Brown, University of Texas head football coach.

“We eat what we kill”
--- Ed Goble, Chief Financial Officer, University of Texas Athletic Department.

“At Texas, it may be sustainable. But think about the schools that are desperately struggling to stay in the game and are dramatically increasing the university’s subsidy of intercollegiate athletics and aren’t succeeding in improving their financial position. Texas, in a certain sense, elevates the stakes of the game so that schools ... are further motivated to make financial commitments to try to catch up.”
--- Peter Likins, Former President, University of Arizona

The preceding quotes² outline key elements of the current United States intercollegiate athletics system that have received insufficient attention from the academic research community. Though the system is likely unsustainable and problematic for the foreseeable future, as suggested by the Knight Commission on Intercollegiate Athletics’ *Restoring the Balance*, current and future challenges are actually quite predictable. In this report, we introduce an overarching framework that explains and connects these elements in an effort to illuminate the challenges facing intercollegiate athletics and identify potential policies that could help mitigate those challenges.

Theoretical Approach

In regards to theory, this report has two primary objectives. First, we seek to advance our understanding of intercollegiate athletics by developing a thorough description of key financial

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² These quotes were reported by Dexheimer (2007) and Weiberg et. al (2012). Our choice of quotes should not imply that the University of Texas is the sole driver of the phenomena described in this report. Empirical results will show that a group of institutions, including Texas, with access to high revenue drive the system.

dynamics present within the athletics system by drawing on a number of organizational theories across several disciplines. Second, we seek to make this theoretical framework accessible to policymakers, institutional administrators, and the general public. Though the framework is based on a wide array of highly complex theories, its usefulness will only come to fruition if it is understandable and defensible with empirical evidence.

In previous research, economists have applied game theory, principal/agent, and cartel models to understand the intercollegiate athletics finances system and to establish policy recommendations (Fleisher, Goff, & Tollison, 1993; Fort, 2010a; Frank, 2004). Other scholars have used individual organizational theories to illuminate key processes that influence the financial situation of individual athletic programs (e.g., Bouchet & Hutchinson, 2010; Smart & Wolfe, 2000; Washington & Zajac, 2005). Our work differs in that we use a wide array of theories to highlight the interactions between revenues, expenditures, and subsidies, as well as the interactions between the financial situations of elite institutions and the financial situations of other colleges and universities within the higher education system.

We draw most heavily from the following major theories and provide concrete examples how each illuminates a different aspect of the athletics finances system: resource dependency theory, new institutional theory, the organizational Matthew Effect, escalation of commitment theory, Bowen's revenue theory of costs, and positional arms races. Rather than organizing evidence by each separate academic concept, we synthesize their explanatory usefulness into an easy-to-understand overarching three-step framework, briefly summarized as follows:

1. **Diverging Revenues:** A small set of athletics programs increasingly has access to opportunities to generate enormous levels of revenue from external sources.

2. **Cascading Expenditures:** This small set of athletic programs increases expenditures on athletics when revenues increase. Several forces then lead this spending to spur expenditure growth at other athletics programs.
3. **Ensuing Subsidies:** Increased spending at non-elite athletic programs occurs without simultaneous revenue growth, which leads to increased institutional subsidies or student fees for athletics. Such increases may promote resistance if subsidy levels grow too high and/or the financial situations of these institutions and their students deteriorate.

These three steps are intended to serve as a shorthand description of much more comprehensive ideas. Our analyses that follow present extensive descriptions, theoretical explanations, and empirical evidence for each step of the model.

Data and Empirical Methods

Intercollegiate athletics finances data were drawn from the *USA Today* NCAA athletics database, which contains publicly available data from NCAA financial reports for nearly all public Football Bowl Subdivision (FBS) athletics programs for the 2005-2010 fiscal years. The sample is comprised of the 93 FBS institutions that reported sufficient data for the years and variables examined. We use total revenue and expenditure values for each of these fiscal years, as well as specific revenue and expenditure categories. All figures were adjusted to 2010 dollars using the consumer price index (CPI). Because an important aspect of our theoretical framework considers institutional subsidies provided to athletics programs, we calculated a “subsidy” variable comprised of the sum of the following revenue subcategories: student fees, direct state/governmental support, direct institutional support, and indirect facilities/administrative support. The sum of the remaining revenue categories is referred to as “external revenues”

throughout the paper, as they represent dollars the athletic program generated from external sources.

Though this dataset is fairly comprehensive in scope, it contains imperfections. In cases where individual revenue/expenditure categories did not sum to the total reported revenue/expenditures for a year, we contacted institutions directly to correct for the discrepancy. These errors were typically caused by improper data entry and were easy to address. We were unable to adjust for other imperfections, such as accounting irregularities across institutions that have been identified in previous work (Clotfelter, 2011; Weisbrod et al., 2008; Zimbalist, 1999). Because we primarily study basic relationships of considerable strength in this paper, measurement error is unlikely to obscure the examined relationships.

One accounting issue is noteworthy. Some institutions sell tickets directly to students and consider these proceeds to be ticket revenue, but other institutions charge higher student fees and allow students to attend games without further charge. The data used in this study do not allow us to correct for this somewhat arbitrary difference. We consider the former payments as revenues generated by the athletic program and the latter payments as subsidies provided by the student body. One could argue that from the perspective of students who have no interest in attending a sporting event, a student fee is fundamentally different than a charge to purchase athletic tickets. Our subsidy estimate will be most accurate from the perspective of those students.

These financial data are supplemented with data from several other sources used to characterize athletics programs and institutions of higher education, including the following:

- **Institutional enrollments:** Full-time equivalent undergraduate enrollment data based on 12-month instructional activity were obtained from the Integrated Postsecondary Educational Data System (IPEDS).
- **Conference and Divisional Affiliations:** Data were readily available and corroborated from a number of sources, including the EADA dataset, the NCAA, and end-of-season standings published by ESPN.
- **Current Athletics Success Measures:** A number of measures were used to gauge the success of an athletic program. These include Sagarin Indices for both basketball and football, the ratings percentage index (RPI) for basketball, NCAA tournament appearance for basketball, football winning percentages for multiple seasons, season-ending BCS rankings for football, per game season attendance totals for football, and final overall score in the Director's Cup. These data were obtained from a variety of publicly available sources, including the *USA Today*, ESPN, and the NCAA websites.
- **Historical Athletics Success Measure:** Historical success of football programs, the traditional cornerstone of an athletic department's budget, was based on a program's total number of wins. Programs in the top-40 all-time were considered to be the most successful historically.
- **Institutional Success Measures:** Two measures were used to indicate the overall success or prestige of an institution: 1) membership in the Association of American Universities (AAU), and 2) *US News and World Report* ranking. This information is publicly available.

We richly describe the financial situation within the intercollegiate system using a variety of statistical tools. We employ basic descriptive statistics, correlations, inequality indices, and

mobility indices. Graphical depictions of the data – that thoroughly describe the distribution of revenues, expenditures, and subsidies across higher education institutions – are also utilized (Cleveland, 1993, 1994).

Step #1: Diverging Revenues

Derek Bok (2003) noted the rapid growth of revenue-increasing opportunities for higher education institutions that were created by the rise of the knowledge-based economy. Financial opportunities were also increasing within intercollegiate athletics, although a different set of forces were driving revenue growth. For example, television became an important revenue source over time, especially as cable television expanded and the country grew more affluent (Clotfelter, 2011). The rise of television enhanced the dominance of elite programs as their revenue and visibility were most advanced by this form of technology (Dunnavent, 20004). The benefits grew more unequal after a 1984 Supreme Court decision allowed individual schools or associations of schools to negotiate directly with television networks. Elite athletic conferences were now allowed to keep the revenues associated with their television appearances, and they were able to increase these revenues drastically over time. To demonstrate revenue growth, consider that all institutions shared approximately \$45 million per year for football in various television contracts in the mid-1980's (Zimbalist, 1999). Total revenue for men's basketball – the other heavily televised sport – was approximately 25% of total revenue for football in 1985 (Fulks, 1995), so the total annual revenue from television contracts in the mid-1980s was likely in the range of \$55 million to \$75 million. In recent years, the total annual revenue from television contracts has risen to over \$1 billion (Fort, 2010b; Peloquin, 2011), an increase well over 1,000% since the mid-1980s.

The growing affluence, especially among the wealthiest members of society, in combination with new revenue-generating strategies employed by athletic programs also led to major revenue gains. Premium seats at sporting events were increasingly provided only to those individuals who donated large sums of money to the athletic program. Especially passionate fans were given the opportunity to donate even more money for receiving invitations to banquets and receptions, public recognition in athletic program materials, premier parking for athletic events, and gaining special access to teams, among other incentives (Clotfelter, 2011).

As Figure 1 demonstrates, the revenues that flooded into athletics from external sources have not been evenly distributed across all programs. In both 2005 and 2010, vast differences exist, as the elite FBS athletic programs generated well over \$100 million dollars, while those at the bottom of the hierarchy generated less than \$10 million. The gap increased over our period of record, as programs at the very top experienced a revenue growth of approximately \$30 million, while external revenue totals at programs near the bottom remained fairly stable. Table 1 reports mean values for the various categories of revenue that athletic programs generate, and we investigated whether the overall patterns also held for these specific revenue categories. Figure 2 presents the analysis for ticket revenue – the largest revenue source – to demonstrate these patterns. Lowess (locally weighted regressions) curves were created for the scatter plots in Figure 2a (for 2005) and Figure 2b (for 2010) and then recreated in Figure 2c to demonstrate how the distribution of ticket revenues has changed over time. Figure 3 presents lowess curves for each of the four primary sources of revenue – tickets, contributions, NCAA/conference distributions, and royalties/licensing/advertisements/sponsorships. For each of these revenue subcategories, the basic pattern of major and growing revenue gaps across athletic programs was consistent.

This high level of revenue inequality within intercollegiate athletics is not surprising because the system possesses many of the core features of a winner-take-all market, as described by Frank and Cook (1995). Payoffs are determined by relative performance: When an athletic team wins regularly by outperforming their opponents on the playing field, their fan base grows, which allows the athletic program to generate more money from ticket sales, donations, and other items. Small differences in talent and effort across institutions coincide with large differences in rewards, with the highest rewards concentrated among a small number of programs.

Self-reinforcing processes (i.e. positive feedback loops) are important elements of many winner-take-all markets, and they are central to the case of intercollegiate athletics (Frank & Cook, 1995). These processes, illustrated in Figure 4, promote revenue divergence.³ Major fan interest and related revenue sources play a central role, as large and passionate fan bases allow athletic programs to negotiate more lucrative television packages and charge higher prices for tickets and merchandise, while selling larger quantities of both. The resulting revenue allows a subset of athletic programs to build superior facilities and hire coaches at high salaries. In turn, those facilities and coaches, coinciding with the attractiveness of playing for a winning team, attract top recruits. Completing the feedback loop, top coaches and recruits are then likely to succeed on the playing field, which continues to build the history of winning within the program and further solidifies the fan base.

These positive feedback loops should allow most of the institutions at the top of the revenue distribution to remain there over time. Such consistency did occur between 2005 and

³ Within past research on higher education, these positive feedback loops have received considerable attention and are sometimes described as a Matthew effect (Merton, 1968; Trow, 1984; Winston, 1999). Many of the specific self-reinforcing processes underlying the Matthew effect within intercollegiate athletics also occur in the academic world in a modified form.

2010. Of the programs residing in the top 10 percentiles of external revenue in 2005, 80% were still in the top 10 percentiles in 2010. Considering the top 20 percentiles, there was a 75% overlap between 2005 and 2010. The positive feedback loop logic also predicts that high-revenue institutions possessed strong fan bases and experienced on-field success during this period and in previous periods. Several different measures of athletic success for basketball, football, and the entire athletic program exhibited a moderate to high correlation with total revenue for an athletic program (see Table 2). Stark differences were apparent in mean external revenue totals between teams participating in the NCAA tournament or ranked in the final BCS standings compared to those who were not as successful. This pattern also was evident historically, as external athletic revenues at programs containing the top-40 winningest football teams were more than twice as high as external revenues at other programs. Moreover, the total external revenue gap between those in the top-40 and the other programs in the sample has widened over our 6-year period of record, which could mean that the value of initial advantage is strengthening over time.

The lack of institutional mobility within the revenue distribution partially occurs because elite programs can maintain their revenue advantages even during occasional periods of subpar performance. Historical success and the long-term nature of facility investments allow elite programs to weather these storms, as supported by previous research on sports. That literature has distinguished between “die hard” and “fair weather” fans and noted that the former type supports their team even during periods of poor performance (Clotfelter, 2011; Fink, Trail & Anderson, 2002; Wann & Branscombe, 1990). To build a fan base of “die hards,” organizational identity and status must be high, which can be achieved through a rich history of success (Murrell & Dietz, 1992; Robinson, Trail, Dick & Gillentine, 2005; Wann & Branscombe, 1990).

We examined the relationship between winning and per-game attendance, a proxy for fan interest. As shown in Figure 5A, the correlation between attendance and football winning percentages at BCS-conference schools was .16, while it was .35 at non-BCS schools.

Historically, football programs that are in the top-40 all-time exhibited a correlation coefficient of .05 compared to .31 for all other programs (Figure 5B). This clearly demonstrates that a tradition of success on the field leads to more stable fan attendance, regardless of the team's short-term performance.

In addition to limiting access to various revenue sources, the positive feedback-loop phenomena makes it difficult for programs to move up the hierarchy of intercollegiate athletics. Without substantial amounts of revenue, large fan bases, and existing facilities, a program faces huge challenges that impede success on the playing field against elite programs. Short-term success caused by a recruit overlooked by elite institutions or an emerging coach is difficult to maintain; only a few institutions, such as Gonzaga in men's basketball and Boise State in football, have been able to succeed in this manner. Very few institutions in major athletic conferences have been able to jumpstart a positive feedback loop through the infusion of major amounts of external revenue from a specific donor. Oklahoma State and Oregon, who receive gifts in the hundreds of millions of dollars from T. Boone Pickens and Phil Knight, are rare exceptions to the immobility rule.

An institution's conference affiliation plays a major role in determining its current revenue levels and its ability to increase revenue in the future. To explore between- and within-conference external revenue inequality, we use the Thiel index, which can decompose overall inequality into between-group and within-group shares (Cowell, 1995). The results in Table 3 demonstrate that external revenue inequality grew between 2005 and 2010, which is consistent

with what we observed in Figure 1. Between-conference inequality accounted for the vast majority of inequality in both years and accounted for a majority of the increase in inequality over time. Table 4 provides a rich description of this between-conference inequality by reporting the average external revenue separately for each conference. Conference averages ranged from \$5 million to \$65 million in 2005, and that gap widened over our period of record. The top four conferences saw revenue gains of approximately \$20 million per school, while average revenues only increased by \$1 to \$5 million among the bottom five conferences.

In summary, we have demonstrated in this **Diverging Revenues** step how and why a small set of athletics programs have access to opportunities to generate enormous revenue levels from external sources. Moreover, we explained why it is very difficult for other institutions to break into this small set of programs over time. As the next step illustrates, the select group of programs consequently can spend extensively without relying on institutional funds.

Step #2: Cascading Expenditures

In this second step, we focus on expenditures. We argue that as externally generated athletic revenues increase at elite institutions, athletic expenditures increase as well. Through a variety of competitive and institutional pressures, these increased expenditures among elite programs subsequently lead other programs to increase their expenditures as well. Thus, expenditures cascade from high-revenue programs throughout the entire system to lower-revenue programs.

Expenditures at Elite Athletic Programs

Figures 6 and 7 show that elite athletic programs spend nearly all of the revenue they generate, and Figure 8 highlights how expenditures at elite athletic programs increase alongside revenues. Why do athletic expenditures rise in tandem with athletic revenue at elite athletic

programs? There are many compelling reasons for universities to disallow such an occurrence. The marginal benefit from increased expenditures on athletics is not necessarily greater than the marginal benefit associated with other items that the university could purchase with these extra dollars. Furthermore, Weisbrod, Ballou, and Asch (2008) outline the problematic incentives that are present when an athletic program “owns” their revenue. Although these arguments are compelling, most universities with elite athletics programs treat these departments as self-contained financial units.

Any unit within a higher education institution that generates large amounts of revenue wants to be treated as such a self-contained financial unit. As a Dean of a business school recently lamented, “I work 10 times as hard keeping money from going out the back door as I do keeping money coming in the front door” (Mangan, 2012). Being a self-contained unit mitigates such hardship, and athletic programs have a distinct advantage over other units when seeking to retain and spend generated revenue. Applying resource dependency theory illuminates reasons for that advantage.

Pfeffer and Salancik (1978) outline factors that characterize power relationships based on resource dependence; four of these are extremely relevant to the context of athletics programs when considering how university leaders may limit or control spending by the athletic program. These four conditions – modified to fit our context – are as follows:

- The athletic program does not control the determination, formulation, or expression of the university leaders’ demands.
- The athletic program’s satisfaction of the university leaders’ requests is not in conflict with the satisfaction of demands from other important entities.

- The athletic program does not control the allocation, access, or use of other resources critical to the university leaders' operation and survival.
- The athletic program obtains some resources from the university leaders making the demands.

University leaders will more easily control athletics spending if these conditions are present.

The first three conditions are unlikely to hold at elite programs whenever major donors, politicians, and board of trustee members are fans of the athletic program and strongly desire athletic competition success. Major donors and government officials are important entities for athletic programs and provide resources that are critical to the larger university. Consequently, these stakeholders could successfully pressure the institution to abandon expenditure restraints on the athletic program. Board of trustee members can shape institutional policy and hiring decisions in a manner that also limits demands for expenditure restraints. A savvy athletic director or coach would recognize these dynamics and seek out powerful supporters to ensure that no dollars “go out the back door.”

The last condition noted above suggests that the absence of institutional subsidies to the athletic program hinders attempts by university leaders to limit athletic expenditures. Most analyses of self-sustaining athletic programs miss this point and solely focus on how the absence of institutional subsidies allows other parts of the university to retain revenues. Officials in athletic programs, however, exhibit great awareness of this phenomenon. They recognize how the lack of institutional subsidies has important symbolic value in debates over the proper level of athletics expenditures. As the chief financial officer of the University of Texas athletic program noted, “We eat what we kill.” This statement was made to deflect critiques of high levels of athletic spending at Texas (Dexheimer, 2007).

The absence of an agreed-upon target regarding the proper level of spending also hinders attempts to restrain athletic expenditures. In his revenue theory of costs, Howard Bowen outlined how the inexhaustible nature of university goals promotes ever-increasing expenditure growth. We present a version of Bowen's five laws of higher education costs that fits the context of intercollegiate athletics.

1. The dominant goals of athletic programs are competitive success, prestige, and educational excellence.
2. In quest of these goals, there is virtually no limit to the amount of money an athletic program could spend for seemingly fruitful athletic and educational ends.
3. Each athletic program raises all the money it can.
4. Each athletic program spends all it raises.
5. The cumulative effect of the preceding four laws is towards ever increasing expenditures.

The vague goals stated in the first law imply that any rational attempt to determine proper spending levels will appear arbitrary, which makes it difficult for university leaders to justify imposing any spending limits. In combination, the laws suggest that if athletics is treated as a self-contained financial unit, revenue increases within elite athletic programs will quickly translate into increased expenditures. No end point for athletic spending ever occurs, as athletic directors could always argue for new spending that would attract stronger coaching personnel, improve recruiting efforts, enhance facilities, and improve academic advising services. These arguments grow more effective if other elite athletic programs are already increasing expenditures. Our next section builds upon this last point by discussing how increased spending at elite athletic programs can encourage expenditure growth at other programs.

Expenditures at Non-Elite Athletic Programs

Figures 6–8 show that although expenditure increases at low-revenue athletic programs do not equal the spending growth occurring at high-revenue athletic programs, expenditures do increase by a meaningful amount at less-elite programs. This expenditure growth outpaces revenue growth so that athletics deficits, which have to be covered by institutional subsidies, increase. We employ ideas from economics, psychology, and organizational theory below to explain how this expenditure growth at less-elite athletic programs might result from the drastic revenue and expenditure growth that occurs at elite programs.

The Positional Arms Race

Economists note that positional arms races can occur when rewards depend upon rank. Such rank-based competition is central to intercollegiate athletics, as success of an athletic team is based on its position relative to other teams: Did you have a winning record? Were you ranked first in your conference? Were you one of the select number of teams invited to the NCAA tournament? Were you one of the tournament's final four teams?

The primary issue in rank-based contests is whether one's performance exceeds that of the competition. As Figure 4 outlined, competitive success is heavily determined by the quality of athletes and coaches that are attracted to an institution, which depends in part on the quality of facilities and level of coaching salaries. For example, the University of Kentucky can gain a competitive advantage in men's basketball by paying its head coach \$5.4 million per year and building a \$28 million basketball facility. Similarly, the University of Alabama can gain a competitive advantage in football by paying its head coach \$5.3 million per year. Despite already having a 22,000 square foot weight room with 24 platforms, head football coach Nick Saban illustrates his clear understanding of the importance of competitive advantages in his

announcement of a new state-of-the-art weight room: “When people come to Alabama, they expect to see the best . . . We should always strive to have the best. As long as we have the resources and we can provide the best for our student-athletes, that's what we should do in all sports.”⁴

Other elite national programs (e.g. Florida, Michigan, Ohio State) aggressively seek to gain a competitive advantage. As the University of Florida Athletic Director Jeremy Foley quipped: “If you need a nice weight room to attract a top athlete, you're going to do that, but you need that weight room to help that athlete get better, too . . . If you have to spend money to pay a coach like Urban Meyer, you're going to do that, too. You've got to spend money to make money. It doesn't just happen.”⁵ As such, athletic programs seeking to remain in the top tier must spend similar amounts; otherwise their ability to attract coaches and athletes of the highest quality will be threatened, which could then make them less likely to win rank-based competitions. Elite national programs are constantly under intense pressure to increase the salaries of their coaches, build better and larger facilities, and improve a variety of other aspects of their program; all of these activities increase expenditures.

Because elite athletic programs are distributed across several athletic conferences, spending pressures quickly filter down through the system to less elite programs. Though conference members may not feel extreme pressure to win national tournaments, they often feel pressure to remain competitive with their in-conference peer institutions. These lower-ranked members of elite conferences also compete with some of the higher-ranked members of less-elite conferences in out-of-conference games and in NCAA tournaments. In turn, the higher-ranked members of less-elite conferences then compete with fellow conference members. Cascading

⁴ http://www.al.com/sports/index.ssf/2012/06/nick_saban_eyes_a_new_weight_r.html

⁵ http://www.cleveland.com/ohio-sports-blog/index.ssf/2010/12/ohio_state_was_college_footbal.html

spending pressures continue to move from less-elite conferences to conferences even further down the competitive hierarchy; ultimately, spending at the very top has a large indirect influence on the entire system.

Cascading spending pressures do not have to translate into cascading expenditures if athletic programs choose to ignore such pressures. They could conceivably accept losses in competition or elect to join less competitive conferences or divisions. This form of unilateral disarmament rarely occurs within intercollegiate athletics, however, for a number of reasons. As noted in our earlier discussion of resource dependency theory, major donors, politicians, and board of trustee members who are fans of the athletic program have the ability to influence university decision-making, and they are unlikely to accept a future of losses or a future of low-level competition. Athletic directors and coaches, whose careers will be hampered by poor performance or low-level competition, will encourage such resistance.

Aside from pressure of external stakeholders, institutional leaders may decide to increase spending for additional reasons. Some believe that the benefits resulting from big-time college athletics (e.g., Anderson, 2012; Clotfelter, 2011; Toma, 2003) outweigh the costs. Because many of these benefits are difficult to quantify, a rational cost-benefit analysis becomes complicated. Frank (2004) highlights a potential “Lake Wobegon” effect that may cause university administrators to overestimate the likelihood of competitive success for any given level of financial investment. Optimism regarding athletic success could also be driven by the human tendency to contemplate familiar and vivid cases when retrieving events from memory (Frank, 2004; Tversky, & Kahneman, 1974). Elite programs are the most familiar reference points because of heavy media coverage, and surprising cases of athletic success are

simultaneously familiar and vivid (e.g., victories by Cinderella teams). Following this logic, administrators may assume falsely that increased spending is likely to yield success.

Organizational theorists also note that social and organizational determinants – in addition to psychological determinants – explain why organizational leaders may continue to pursue actions even if those actions are no longer rational (Bouchet & Hutchinson, 2010; Staw & Ross, 1989). For example, such escalation of commitment explains why decision makers often follow the same course of action with the hope that the failed strategy will exhibit a turnaround rather than admitting past mistakes publicly. When decision-makers are willing to shift strategies, it is often difficult to change the course of an athletic program or unit within an institution of higher education. These large organizations with multiple stakeholders tend to accrue a great deal of inertia, reducing their abilities to change quickly, even when new strategies appear to be better than current strategies. In summary, the bounded rationality of decision-makers and organizational constraints within which they work may contribute to an athletic program's continued spending increases.

We have a very limited understanding of the extent to which competitive success in athletics enhances the larger goals of the university. Institutional leaders will consequently have trouble making spending decisions when approaching the issue in good faith, and regardless of the decision reached, they will have difficulty clearly explaining why their choice was correct. A well-articulated rationale is important when athletics expenditures are increased within a public institution facing serious financial challenges, especially when the athletic program receives substantial levels of institutional subsidies or student fees. Legitimate questions arise regarding spending priorities at the institution: Why should athletics coaches receive large raises while

salaries for other employees have been frozen? Why should new infrastructure projects occur in the athletics complex when other buildings on campus are deteriorating rapidly?

In such an uncertain environment, the spending levels at elite athletic programs can have great influence. Consider the recent case of Virginia Commonwealth University to increase the annual base salary of the head basketball coach from \$350 thousand to \$1.2 million. Institutional leaders had no clear calculus for determining whether \$1.2 million was a proper amount to be paying their basketball coach during difficult financial times. Without such a calculus, conversations underlying the decision-making process would likely be meaningfully altered if one were to note initially that the head coach's salary is \$5.4 million at Kentucky, \$4.8 million at Louisville, and \$4.7 million at Duke. Tversky & Kahneman (1974) assert that humans tend to be influenced by an initially suggested value when addressing a quantitative problem. This initial value serves as an anchor making values of smaller magnitude appear more reasonable. In the context of intercollegiate athletics, the salaries offered by elite programs act as anchor points for other athletic programs negotiating salaries in efforts to retain a coach. When publicly explaining their spending decisions, leaders can use the anchoring process by noting the salaries of competitors.

With respect to facilities, elite programs likely create even more powerful mental anchors. The luxury and size of locker rooms, weight rooms, indoor training fields, and stadiums at elite athletic programs are breathtaking. When Iowa State University was considering an \$8 million basketball training facility, for example, the recent \$28 million basketball practice facility at the University of Kentucky made the Iowa State project appear more reasonable. Psychological effects likely go beyond dollar comparisons in the case of facilities, as high-end structures and equipment elsewhere will influence how coaches, players,

athletic trainers, fans, and others perceive the facilities at their own program. Frank (2007) highlights the nuanced routes by which the presence of high-end possessions alters how others feel about their own possessions. Following visits to elite athletic programs' magnificent facilities, coaches', players', and fans' perceptions of their own weight rooms, locker rooms, stadiums, and other items will change. These individuals will be more likely to voice dissatisfaction regarding the suitability of their current facilities. Therefore, the positional arms race is driven not only by competitive forces, but also by a series of psychological forces.

New Institutional Theory

Applying new institutional theory provides additional insights on how expenditures cascade down the intercollegiate athletics system. Institutional isomorphism – a central concept in this theoretical tradition – leads organizations to become more homogeneous over time through three types of processes: coercive, mimetic, and normative (DiMaggio & Powell, 1983). We argue that many of the isomorphic pressures inherent in these processes lead athletic programs to gravitate towards the expensive practices characterizing elite programs.

Coercive isomorphism results from “pressures on groups of organizations by other organizations upon which they are dependent and by cultural expectations in the society within which organizations function” (DiMaggio & Powell, 1983, p. 150). Athletic programs and the universities within which they operate are dependent upon a wide array of organizations. Most importantly, state and federal governments and the NCAA provide high amounts of revenue to higher education institutions and have the ability to regulate them. Given the tendency of human beings to contemplate familiar and vivid cases when recalling events from one's memory (Tversky & Kahneman, 1974), we would expect legislators and other government officials to consider elite athletic programs – who are covered extensively in the media – when

contemplating legislation and regulations. If they are crafting a policy with a wealthy elite program in mind, government officials are more likely to assume that athletic programs have sufficient revenue to cover costs associated with any proposed regulation, such as new compliance offices.

Voting members of the NCAA are unlikely to be overly influenced by the media's coverage of elite programs, as they are focused on the situations at their particular institutions. The wide variation in perspectives, for example, explains the sharp divergence of views regarding a recent proposal to allow schools to provide an additional \$2,000 for full scholarship athletes in Division I (Staples, 2012). Elite athletic programs find this proposal appealing partially because they are under tremendous pressure to justify paying their coaches millions of dollars while providing modest stipends for athletes. Other programs – that already require substantial levels of institutional subsidies and student fees – are resistant to rules that would worsen their financial situations. The extent to which elite athletic programs wield disproportionate power within the NCAA may also contribute to spending increases throughout the system.

Coercive isomorphism is also shaped by the cultural expectations in the society within which organizations function. For example, society currently expects major public research universities to house major intercollegiate athletics programs. That expectation may explain the following statement by Timothy Ryan when he was chancellor of the University of New Orleans about keeping the athletics program in Division I despite facing stiff financial challenges following Hurricane Katrina: “We’re a public research university. We didn’t feel that it would be appropriate for the University of New Orleans to be in one of those other divisions” (Sander, 2009).

Mimetic isomorphism occurs when organizations are unsure about the best way to proceed; they navigate uncertainty by modeling themselves after organizations perceived to be more legitimate or successful (DiMaggio & Powell, 1983). Such uncertainty arises regularly for organizations – like higher education institutions – that have ambiguous goals and are unclear about the best way to achieve those goals. University leaders face key questions that are very difficult to answer: To what extent does additional athletic spending help promote competitive success? How much does participation in high-profile athletic contests – especially victorious participation – help the university reach its larger goals? How much are these contributions to goal enhancement worth to the institution? New institutional theory suggests that rather than try to determine athletic spending levels by answering these almost unanswerable questions, institutional leaders will instead simply mimic the athletic spending at universities deemed legitimate and successful.

The chancellor of the University of New Orleans' assertion may be driven by the realization that the most academically prestigious public universities have successful high-revenue athletic programs. In 2010, the average revenue for AAU member institutions, a prestigious subset of research universities, was \$79.1 million compared to \$42.7 million at non-AAU institutions. For that same year, average revenue for institutions that were ranked by the *US News and World Report* was \$77.9 million compared to an average of \$35.9 million for unranked institutions. As shown in Table 5, institutions that are considered more academically prestigious also exhibit advantages over other institutions on a variety of athletic success measures, ranging from basketball to football to an entire athletic program. With mimetic isomorphism as a powerful force, these results suggest that institutional leaders may view high-

level intercollegiate athletic success as an important strategy for ascending within the institutional prestige hierarchy that exists within higher education.

Normative isomorphism stems primarily from professionalization, the collective struggle of members of an occupation to define the conditions and methods of their work. Coaching is a prominent occupation that exists within intercollegiate athletics, as is the area of athletics administration. DiMaggio and Powell (1983) outline the importance of central organizations in shaping the organizational models toward which others drift within normative isomorphism. Within intercollegiate athletics, high-profile, high-revenue athletic programs fill this role.

The flow of coaches and administrators across athletic programs is one of the means by which normative isomorphism occurs. Many coaches and administrators who work at low-revenue programs wish to obtain jobs in high-revenue athletic programs in the future, so they will want their current institutions to operate in a way that better prepares them for these future jobs. In addition, head coaches at low-revenue programs often have previously served as assistant coaches at high-revenue programs, and their expectations regarding operations and resources will be influenced by those prior experiences.

Moreover, professional organizations can also play an important normative role. Coaches and administrators from high-revenue athletic programs are likely to have disproportionate levels of ceremonial or substantive influence within professional organizations, which will allow them to shape the norms within the entire profession. The National Association of Collegiate Directors of Athletics provides a good example, as 15 of the last 20 NACDA presidents were either from Notre Dame or from one of the five major athletic conferences (ACC, Big 10, Big 12, Pac-12, SEC).

In summary, this second step of **Cascading Expenditures** is driven by a number of different forces, which lead low -revenue athletic programs to adopt expenditure patterns resembling those at high-revenue programs.

Step #3: Ensuing Subsidies

A number of athletic programs *will not* bear the fruit associated with revenue divergence (step #1) but *will* bear the costs associated with cascading expenditures (step #2). Over time, these programs will need to increase their reliance upon institutional subsidies and student fees. The results in Figure 9 indicate that institutional subsidies and student fees have indeed been growing over time. Total subsidies increased by several million dollars at athletic programs in the lower half of the revenue distribution, while subsidies exhibited very little change in the upper half.

Subsidies are not necessarily a bad thing. Higher education institutions subsidize a wide array of activities and justify such funding as appropriate because these activities help institutions meet their overall missions (Zemsky, Wegner, & Massy, 2005). Athletics can be deemed mission-enhancing since activities provide valuable learning opportunities for student athletes and enhance the larger student body by providing a common bond (Toma, 2003). The difficult question facing colleges and universities is how much to subsidize each mission-enhancing activity given limited funds.

The size of these subsidies to athletic programs is substantial. The figures in Table 6 indicate that among our 93 schools in 2010, 43 – up from 35 in 2005 – had annual athletics subsidies that exceeded \$500 per student. The count goes to 27 when the benchmark is moved to \$750 and 9 when it is moved to \$1000, as a handful of schools had especially large subsidies. In 2009–2010, the average listed tuition and fee price was \$7,020 at four-year public institutions,

and the average net tuition and fee price was \$1,620 (Baum & Ma, 2009). Athletic subsidies in the range of \$500-\$1,500 would comprise a major portion of tuition and fees at many public higher education institutions.

We previously outlined several reasons why universities do not respond to increased spending pressures by accepting losses or by moving to less competitive conferences or divisions. This third step outlines the consequences of those choices and prompts the following question: Will public universities with low-revenue athletic programs continue to increase subsidies in future years if revenues continue to diverge and if spending pressures continue to cascade?

In general, a practice of continual subsidy increases is difficult to sustain. As expenditures cascade within the athletics system, the quality of facilities at low-revenue athletic programs grow as do the salaries of coaches and administrators. If facilities and salaries do not improve at the same pace as elsewhere within the university, resistance to institutional subsidies will grow, as demonstrated most notably at Rutgers University (Dowling, 2007). Such resistance, however, has not yet been sufficient to overcome the variety of pressures noted earlier that cause institutions to remain in the arms race.

The financial context currently faced by the larger higher education system, however, is likely a bigger obstacle for the further growth of athletic subsidies at public universities. Many state governments face unprecedented financial difficulties for a variety of reasons, most notably rising health care costs and unfunded pension liabilities (Hovey, 1999; Kane, Orszag, & Gunter, 2003; State Budget Crisis Task Force, 2012). State governments typically treat higher education funding as a balance wheel, cutting during tough times and increasing during good times (Hovey, 1999). Funding from the federal government may also decline as partisan gridlock, growing

health care costs, and high deficits may lead to reductions in financial aid programs and research funding. For most higher education institutions, tuition is the primary revenue source that could possibly replace lost governmental funding, but further price increases could lead to enrollment declines, higher student debts, and increased public antipathy towards colleges and universities (Cheslock & Gianneschi, 2008). These larger financial challenges will make it increasingly difficult for colleges and universities to raise institutional subsidies or student fees to cover rising athletic expenditures.

In summary, this third step of **Ensuing Subsidies** is intuitive—as expenditures cascade, athletic programs must find new revenue sources. Programs with untapped market-based revenue opportunities will feel pressured to realize fully these opportunities, thereby promoting commercialism. Other programs will require increased institutional subsidies or student fees, which may promote resistance if subsidy levels grow too high and/or the financial situation of the institution and its students deteriorates. With growing financial pressures, reliance on subsidies will likely face much resistance in the coming years, thereby rendering the current athletic finances system unsustainable in the long term.

Conclusion

Previous reports have noted the unsustainable financial situation facing intercollegiate athletics, and this report has sought to emphasize key contributing features within the system. Illuminating these features helps us better understand and evaluate various policy alternatives that intercollegiate athletics could adopt and implement. The simple three-step nature of our framework allows one to identify the overarching goals that can be addressed by individual policies, and the extensive analyses contained within the framework highlight the multiple ways these goals can be advanced.

One basic approach would be to alter revenue distribution policies to dampen inequality across athletic programs. Greater revenue equality would alter the level of spending at the top, which could then change the way that expenditures cascade through the system. Increased equality would also alter the financial situations of athletic programs at the bottom, allowing these programs to rely less upon institutional subsidies and student fees. Because athletics subsidies are unevenly distributed across students and more likely to be high at institutions that enroll a greater number of low-income students, alterations to the current patterns of athletics subsidies could help address larger financial challenges within higher education.⁶

The process by which greater revenue equality would alter expenditure and subsidy levels would be complicated, and future research seeking to model those complexities would be a helpful contribution. Further complications arise because of the limited venues in which revenue distribution could be altered. Ticket revenues and donations are in full control of individual athletic programs, and much of the television revenue is controlled by individual athletic conferences. The most promising options lie with revenues from the NCAA basketball championship and the new FBS playoff system. The Knight Commission's recent recommendation for a greater share of these monies to be distributed through an academic-athletics balance fund would promote revenue convergence while also providing incentives for improved academic performance and cost control (Knight Commission on Intercollegiate Athletics, 2010).

A second basic policy approach would be to limit the extent to which high-revenue programs can set expensive spending norms that can cascade down to other programs. The available policies in this arena are restricted by past legal rulings that prohibited NCAA

⁶ See Denhart and Vedder for an analysis of how athletic subsidies are distributed across higher education institutions.

regulations to limit the size of coaching salaries. Recent NCAA proposals have focused on specific items like the number of non-coaching personnel that can be employed or the ability to take teams on foreign tours over the summer. The response to such proposals has been predictable, with elite athletic programs objecting on the grounds of student welfare. These objections are likely also rooted in a desire to avoid any restrictions that limit the advantages provided by superior revenue levels.

A third approach would be to reduce the extent to which expenditures can cascade down from high-revenue athletic programs to low-revenue athletic programs. The most direct route to limit expenditure cascades would be to create a new division that only houses high-revenue athletic programs. Greater separation would reduce or eliminate a number of the mechanisms by which expenditures cascade through the system. This would also face great resistance from multiple directions. Many athletic programs that would not qualify for the highest level of competition would still want the opportunity to interact with elite athletic programs and the elite universities within which they reside. Furthermore, these programs may still possess optimism regarding their abilities to become the next Boise State or Gonzaga, for example. The athletic programs segregated into the highest division would also likely object, as their statuses as “winners” are enhanced by the presence of low-rank competitors. In addition, having less-commercial athletic programs makes it easier for high-revenue programs to maintain tax-exempt status and to continue to treat their athletes as amateurs. The extent to which elite programs would object to an elite-only NCAA division demonstrates the benefits that these programs receive from the presence of low-revenue programs. Such benefits support arguments for greater revenue sharing among athletic programs.

An alternative to these policies is to take no action. Revenue divergence is not a natural law, so perhaps shifts in the marketplace will lead to major revenue convergence in the future. Given the large fan bases of elite programs and the steady increase of money-making opportunities as technology advances, such a shift seems unlikely. Another more likely scenario is for subsidies to no longer ensue. Schools may disarm willingly from high-level completion if the mismatch between athletics and academics in terms of facilities and salaries as well as the financial challenges facing universities continues to increase. The forces prompting athletic programs to continue to compete are quite strong themselves, however, so subsidies may well continue to ensue causing institutions and their students to shoulder an even heavier financial burden. Though seemingly unsustainable, this bleak outlook may be the most realistic scenario for the intercollegiate athletics finances system to continue on its current predictable path.

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Figure 1: Athletics Department External Revenue
(2005 and 2010)

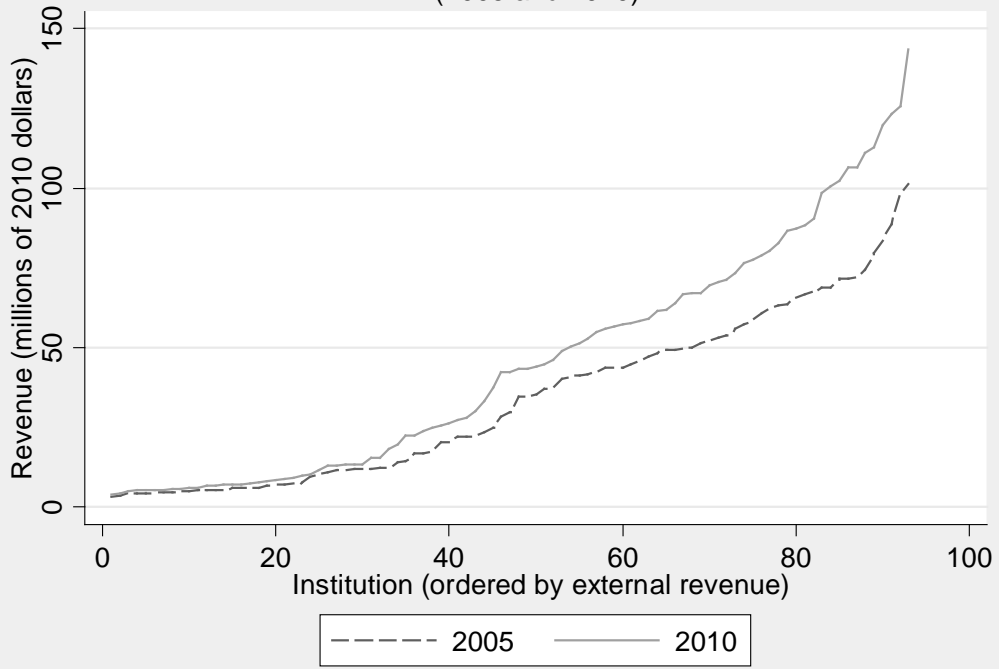


Figure 2: Ticket Revenue

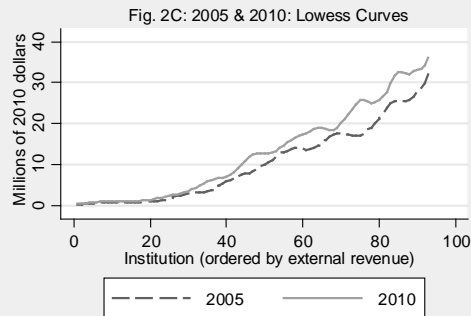
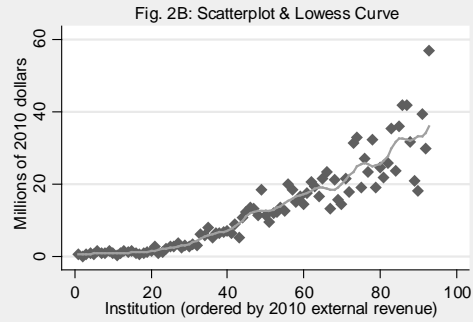
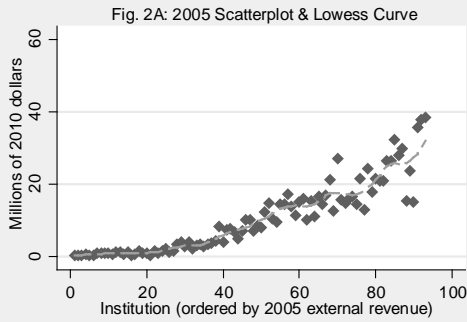
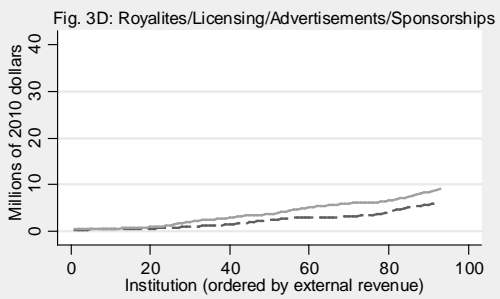
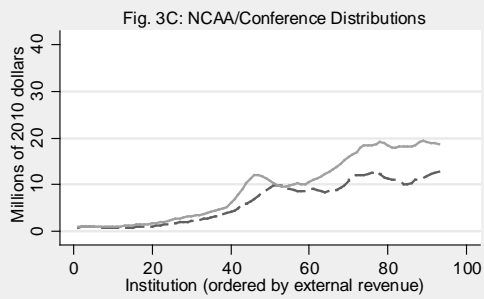
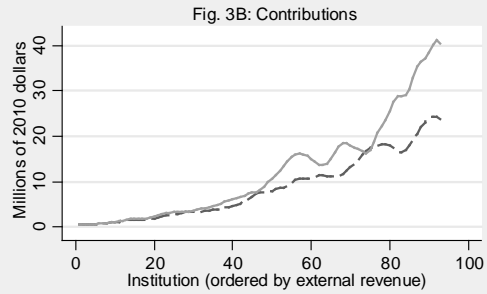
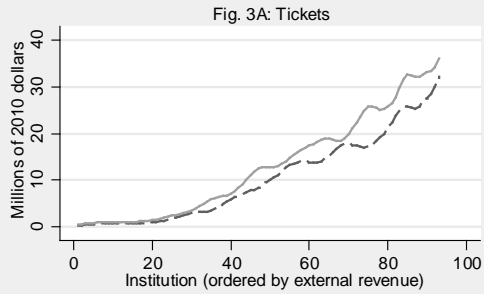


Figure 3: Lowess Curves for Specific Revenue Sources



----- 2005 _____ 2010

Figure 4. The Matthew Effect within Intercollegiate Athletics

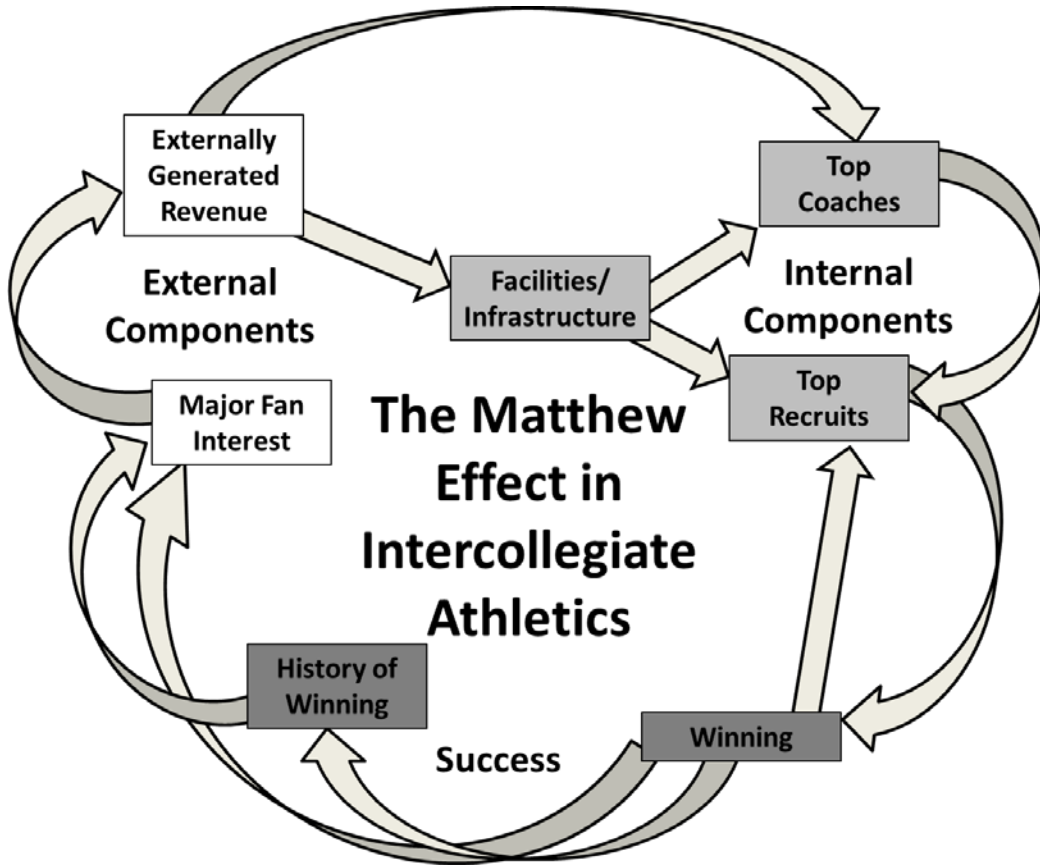


Figure 5. Correlation between football success and per game attendance

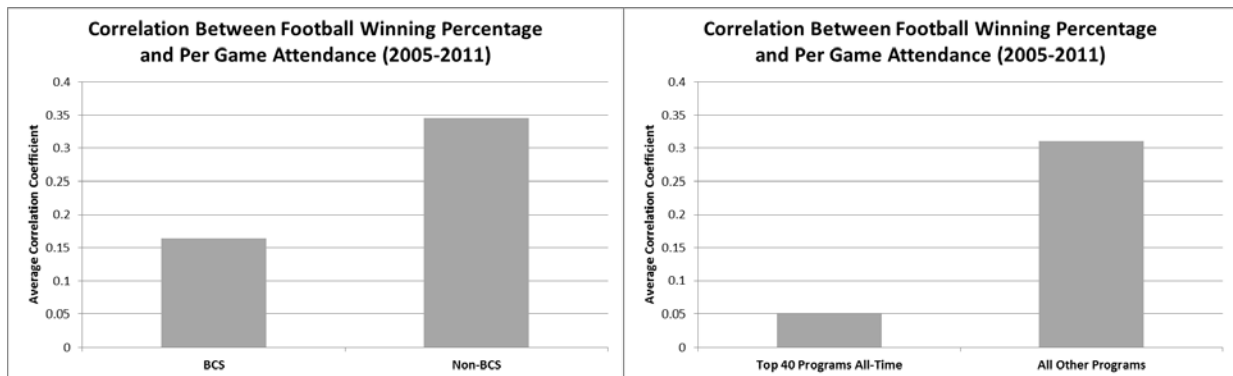


Figure 6: Revenues, Expenditures, & Deficits, 2005

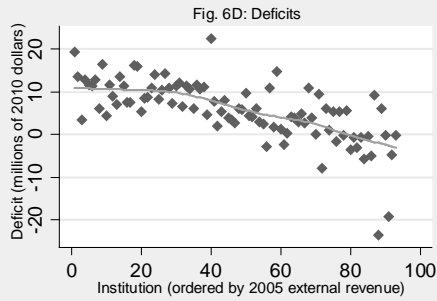
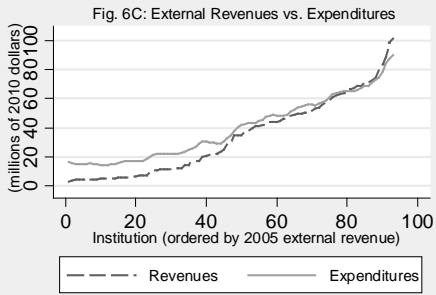
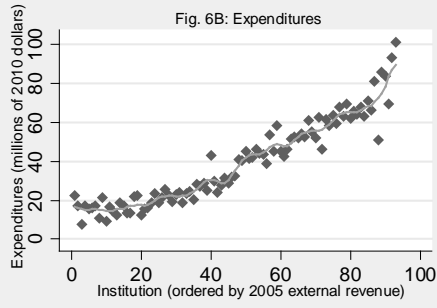
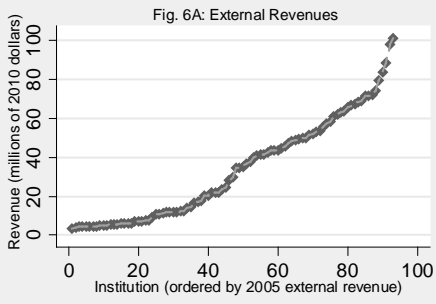


Figure 7: Revenues, Expenditures, & Deficits, 2010

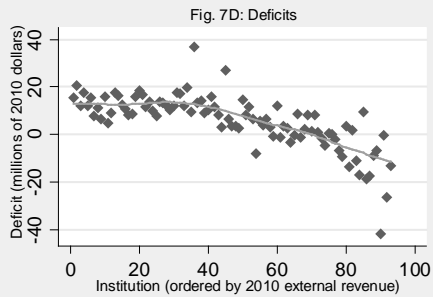
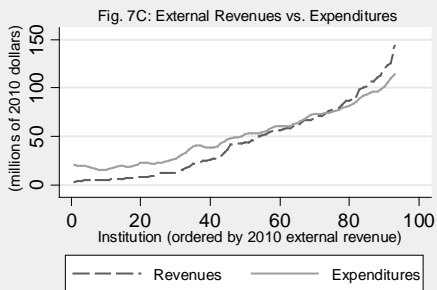
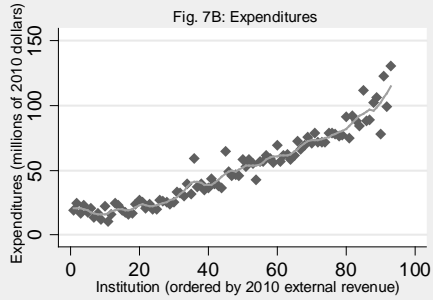
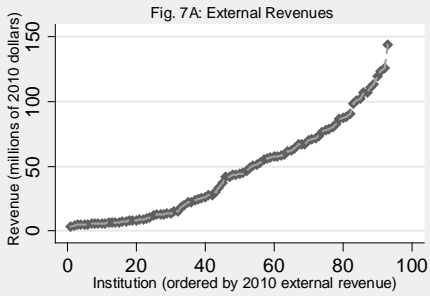


Figure 8: Changes in Revenues, Expenditures, & Deficits, 2005-2010

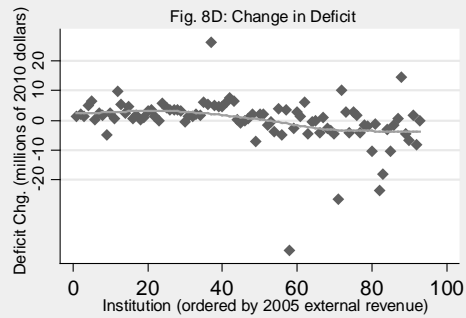
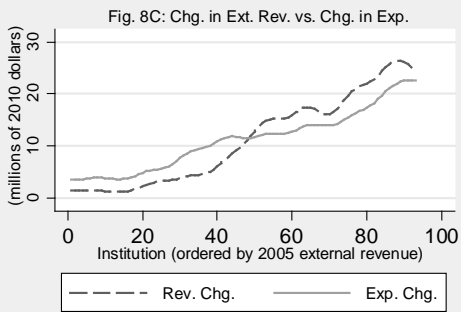
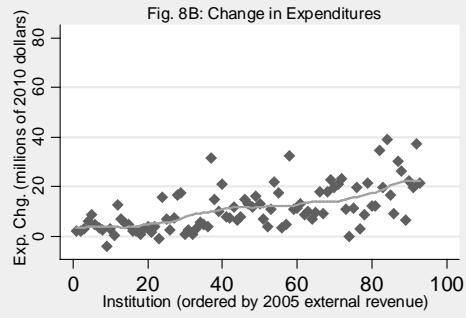
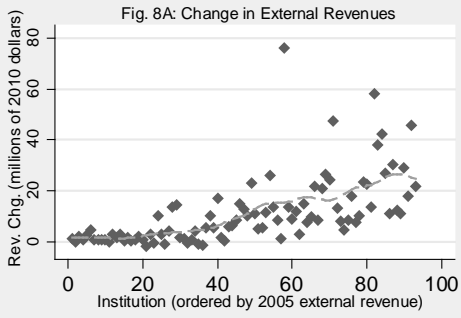


Figure 9: Total Subsidies

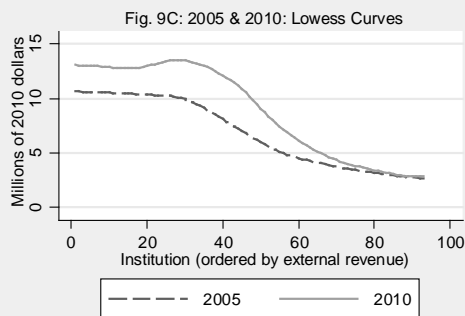
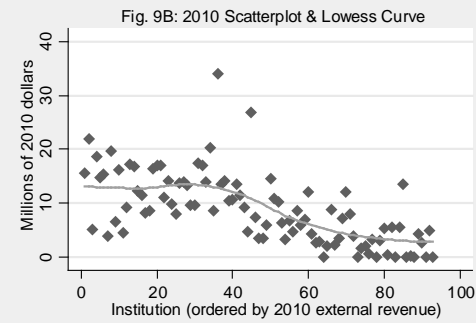
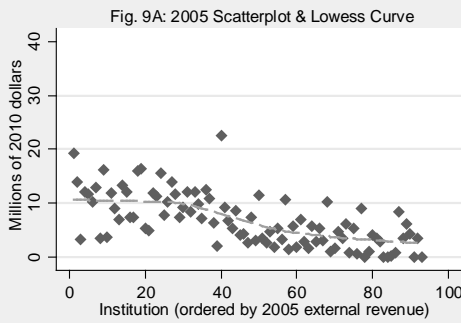


Table 1: Average revenue by subcategory

Revenue Subcategory	2005	2010
Tickets	\$10,483	\$13,093
student fees	\$3,016	\$3,688
Guarantees	\$988	\$941
Contributions	\$8,674	\$12,156
third party contributions	\$193	\$181
direct state/governmental support	\$407	\$354
direct institutional support	\$2,737	\$3,752
indirect facilities/administrative support	\$684	\$1,130
NCAA/conference distributions	\$6,319	\$9,179
broadcast, tv, radio, internet rights	\$1,271	\$1,489
program sales, concession, novelty sales, parking	\$1,103	\$1,405
royalties, licensing, advertisements, sponsorships	\$2,375	\$3,901
sports camp revenues	\$517	\$502
endowment and investment income	\$889	\$933
Other	\$1,001	\$1,315
Total External Revenue	\$33,813	\$45,095

Note: Values are in \$1,000

Table 2: Relationship between athletics success measures and total external revenue

	Measure	2005	2006	2007	2008	2009	2010
Correlations with External Revenue Total	Sagarin Index, Basketball	0.49	0.51	0.68	0.55	0.61	0.49
	RPI, Basketball	0.45	0.45	0.60	0.46	0.54	0.35
	Sagarin Index, Football	0.63	0.55	0.72	0.72	0.64	0.71
	Football Winning Percentage		0.25	0.31	0.37	0.29	0.46
	Football Attendance		0.62	0.87	0.84	0.87	0.91
	Director's Cup						0.83
Average External Revenue by Category (in millions of dollars)	No NCAA Tournament	32.5	35.0	36.7	42.1	38.7	47.4
	NCAA Tournament Birth	42.5	54.9	58.3	61.2	67.1	66.1
	Unranked in BCS	29.5	35.3	35.8	40.7	44.1	45.3
	BCS-Ranked	58.7	67.0	72.3	71.2	67.7	85.4
	Not Top 40 All-time	29.0	33.9	34.2	37.5	38.3	41.7
Top 40 All-time	58.3	65.0	73.5	81.1	81.8	88.8	

Note: The top half of the table presents correlation coefficients while the bottom half presents average revenue by category.

Table 3: Overall, within-conference, and between-conference inequality in external revenue

		# Obs.	Overall	Within	Between
All Programs	2005	93	0.310	0.043	0.267
	2010	93	0.332	0.051	0.281
	Change		0.022	0.009	0.013
Programs Not Switching Conferences	2005	82	0.273	0.039	0.234
	2010	82	0.301	0.049	0.251
	Change		0.028	0.011	0.017

Note: The Theil index was used to estimate overall inequality, and a decomposition of the Theil index was used to estimate within-conference and between-conference inequality.

Table 4: Average external revenue by conference

	# Obs.	2005	2010	\$ Change	% Change
Big 10	10	\$66,836	\$86,583	\$19,748	29.5%
SEC	11	\$58,991	\$84,911	\$25,919	43.9%
Big 12	11	\$56,050	\$74,195	\$18,145	32.4%
Pac 10	8	\$39,657	\$58,761	\$19,104	48.2%
ACC	7	\$49,838	\$57,511	\$7,673	15.4%
Big East	3	\$32,615	\$46,346	\$13,731	42.1%
Mountain West	6	\$17,419	\$18,403	\$984	5.6%
Conference USA	5	\$14,190	\$16,750	\$2,559	18.0%
WAC	5	\$11,122	\$16,498	\$5,376	48.3%
Mid-American	12	\$5,420	\$6,539	\$1,119	20.6%
Sun Belt	4	\$5,324	\$5,454	\$130	2.4%

Note: Values are in thousands of dollars. Schools that switched conferences between 2005 and 2010 were not included in these estimates.

Table 5. Athletic success measures by AAU membership and *US News* rankings.

	Measure	Not AAU	AAU	Not Ranked	US News Ranked
Average Values (2010)	Bball Sagarin	76.5	82.3	75.6	81.9
	Fball Sagarin	68.7	75.2	66.7	76.1
	RPI, bball	0.53	0.57	0.53	0.56
	Fball win pct	0.50	0.56	0.48	0.55
	Director's Cup	313.4	723.8	240.3	696.4
	Fball Attendance	37,400	62,760	29,679	66,071
	% Among Top-40 All-Time	20%	33%	6%	48%

Table 6: Institutional subsidy for athletics per undergraduate student

Subsidy Size	2005	2010
\$0-\$249	39	34
\$250-\$499	19	16
\$500-\$749	18	16
\$750-\$999	13	18
> \$1000	4	9
Total	93	93