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The Bottom Line: Accounting for Revenues and Expenditures in Intercollegiate Athletics

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Abstract:

This paper examines the profitability of Division I athletic programs at colleges and universities in the United States under a variety of accounting definitions of profit. The data identify several broad themes. First, a majority of athletic departments rely heavily on direct and indirect subsidization of their programs by the student body, the institution itself, and state governments in order to balance their books. Without such funding, less than a third of BCS athletic departments and no non-BCS departments are in the black. Second, athletic programs rely heavily on contributions to balance their books. Donations to athletic departments may serve as a substitute for donations to the rest of the university, lowering giving to other programs. Third, football and men's basketball programs are generally highly profitable at BCS schools, but below this top tier, fewer than 10% of football programs and 15% of men's basketball programs show a profit by any reasonable accounting measures.

JEL Classification Codes: L83, O18, R53, J23

Keywords: Athletics, higher education, sports

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Introduction and Data

Athletic departments and intercollegiate sports are important and highly visible components of the majority of colleges and universities in the United States. Football and basketball teams often serve as the public face for major institutions of higher education. It is also generally believed that athletic programs serve as major revenue sources for their institutions. The purpose of this paper is to examine the revenues and expenses of major university athletic programs to determine the extent to which athletic programs either generate revenue or impose costs upon host institutions.

Detailed revenue and expense accounts certified by independent auditors are typically not available for college athletic programs for several reasons. First, even though the Financial Accounting Standards Board (FASB), the Governmental Accounting Standards Board (GASB), and the American Institute of Certified Public Accountants (AICPA) issue reporting and auditing standards and guidelines for institutions of higher education, the standards are different from those required of publicly traded corporations. Second, a large number of the country's colleges and universities are private, not-for-profit institutions, and therefore again are subject to different accounting standards. Third, athletics are simply one division within a larger entity. In general, even those institutions with strict reporting requirements are not required to provide revenue and expense details for every individual operational unit within the business. For example, while Apple is legally required to provide financial statements for its business overall, it is not required to break down how its profits are earned between computers, software, media, and consumer electronics.

While much research has been conducted on the indirect benefits of having sports

programs, little has been conducted on the direct benefits of having intercollegiate sports programs. The few studies that have been conducted and cited here (Skousen and Condie (1988), Borland, Goff and Pulsinelli (1992), Goff (2004)) all agree that determining the actual direct benefits of operating a particular sports program is a difficult process. Due to the not-for-profit environment of universities and their unique accounting procedures, accurately determining the financial profit or loss from athletic programs requires an intimate knowledge of a specific university's detailed accounts and accounting conventions. In calculating profit or loss it is necessary to consider the relevant or marginal revenues and expenses, those revenues that would not be received and those expenses that would not be incurred without the program. Adjustments are also needed for valuing grant-in-aid expenses at their true incremental cost, and attributing athletic-produced revenues and expenses to athletic accounts. The discrepancy between the reported and actual financial impact of sports programs is also due to internal transfer pricing practices. For example, an athlete's grant-in-aid expenditure for the athletic department represents revenue for another operating function of the university, so the athletic expenditure is not the true cost to the university. Another mitigating factor is that some expenditures that are treated as necessary costs, more accurately reflect excess budgeting revenue that needed to be used, as directors of operating functions in a university setting do not have a profit motivating incentive.

Skousen and Condie (1988) developed a model to evaluate the revenues and expenses of the athletic program at Utah State University in order to determine whether it was advisable to drop the football program which, according to university accounting procedures, ran at an operating deficit. The model utilized a cause and effect basis for allocating revenues and

expenses. The authors identified direct revenues and expenses for each sport and used an allocation method for the indirect revenues and expenses (based on number of athletes, number of tickets sold, etc.). The authors found that dropping the football program at Utah State University would not eliminate the financial problems of the athletic program, and in fact would lead to more financial pressures. Borland, Goff and Pulsinelli (1992) used Western Kentucky University as a model for evaluating the direct benefits of an athletic program. They analyzed the economic impact of the marginal revenues and marginal costs of the entire athletic program, football, men's basketball and other sports. Their marginal revenues and costs were calculated based on what revenues and costs would be eliminated without the sports program as a whole, and then for specific sports programs, paying particular attention to marginal vs. sunk costs (those incurred whether or not there is a particular sport). They also included the issue of general student enrollment impacts in their analysis. They found that Western Kentucky University's athletic program was a net contributor to school revenues. Goff (2004) noted that reports have estimated that many university athletic programs, even big-time programs, operate at a loss. He addresses this assertion by adjusting the athletic profit and loss figures, for 109 NCAA Division I schools, reported by Sheehan (1996), for various accounting issues such as valuing grant-in-aid expenses at their incremental cost, and attributing athletic-produced revenues and expenses to athletic accounts, and finds that only 10% of schools lost money, 79% of schools had at least \$1 million in profits, with 72% exceeding \$2 million in profits.

Several sources of financial data for collegiate athletic programs are available. Most prominent is the annual Equity in Athletics Disclosure report compiled for all colleges and universities in the United States with athletic programs by the Department of Education's Office

of Postsecondary Education (OPE). While data specific to each individual school is available for every school with intercollegiate athletic teams at any level of competition, unfortunately, the required data submitted to the OPE is not sufficiently detailed, especially on the revenue side, to permit any reasonable analysis of the revenues truly generated by sports programs.

The other major source of athletic program financial data is the National Collegiate Athletic Association's (NCAA) annual Revenues and Expenses of Division I Intercollegiate Athletics Programs Report. This lengthy report collects detailed data regarding revenues and expenses broken down into 15 revenue categories and 19 expense categories for every academic year for each of the over 300 colleges and universities with Division I athletic programs, the highest level of intercollegiate competition in the U.S. As opposed to the OPE data, the revenue and expense data is sufficiently disaggregated to allow reasonable analysis, but the problem with the NCAA data is that the NCAA does not release data for individual schools and reports, only averages, as well as values at the 25%, 50%, and 75% quartiles for all Division I schools. See Table 1 for a sample of the types of data that are collected.

Ideally, one would like detailed expense and revenue data for each individual school. The OPE provides aggregated expense and revenue data for individual schools while the NCAA provides detailed expense and revenue data for aggregated schools. Fortunately, at least two media organizations have used Freedom of Information Act requests to compel public universities to release the detailed financial information they submitted to the NCAA as part of the Revenues and Expenses of Division I Intercollegiate Athletics Programs Report. *USA Today* has collected data for roughly 200 schools for the years 2004-2009 for overall athletic program costs and revenues. As noted previously, this detailed data includes revenues and expenses

broken down into 15 revenue categories and 19 expense categories. The *Indianapolis Star* newspaper obtained the data originally submitted to the NCAA for the 2004-05 academic year only, but unique to the Star, within each category, all revenues and expenses were allocated across 5 designated areas: football, men's basketball, women's basketball, other sports, and non-program specific. As noted by the *Indianapolis Star* (but also echoed by *USA Today*), "The numbers are presented here as they were reported to the NCAA. No attempt was made to change or research anomalies. The NCAA does that. Despite improvements in accounting procedures, schools still differ in how they report certain information."

Given the ability to examine revenues and expenses within individual sports, it is the *Indianapolis Star* data that will be examined in depth here. The data were obtained through Freedom of Information requests to the 215 public schools that competed in Division 1 athletics, the highest level of intercollegiate competition, during the 2004-05 school year. Of this number, 164 schools complied with the request. In addition, 112 private schools also compete in Division 1, but these schools were under no obligation to comply and none did. See Table 2 for a list of the included schools.

While the 164 schools examined in this paper represent only a fraction of the total number of colleges with athletic programs, it does include a majority of the schools with what would normally be considered "big-time" programs. The sample includes 51 of the 72 teams in one of the six largest athletics conferences in the country, Big Ten, Big 12, Pac-10, Southeast Conference, Big East, and Atlantic Coast Conference, also known as the Bowl Championship Series (BCS) conferences. The sample also includes 46 of the 50 largest schools in terms of average football attendance and 37 of the 50 largest schools in terms of average basketball

attendance.

It is also important to note that this study will only address the direct costs and benefits of athletic programs. Obviously, sports teams may have large indirect costs and benefits that do not show up on the bottom line. On the benefits side, numerous articles have explored the impact of athletic success on measures such as applications (McCormick and Tinsley, 1987; Borland, Goff and Pulsinelli (1992); Tucker and Amato, 1993; Murphy and Trandel, 1994; Toma and Cross, 1996; Goff, 2004; and Tucker, 2005; Pope and Pope 2009), graduation rates (Tucker, 1992; 2004; Amato, Gandar, and Zuber, 2001, and Rishe, 2003), and alumni giving (Siegelman and Carter, 1979; Siegelman and Brookheimer, 1983; Baade and Sundberg, 1994; Grimes and Chressanthins, 1994; and Rhoads and Gerking, 2000; Humphreys and Mondello, 2007). These studies report mixed effects from athletic success, and in those cases where benefits are identifiable, the effects are generally small. Of course, in all of these studies, the authors examine only the effect of athletic success on other variables, not the effect of the presence of an intercollegiate athletic program itself on these variables.

On the other side of the coin, critics of college sports suggest that big-time athletics, in particular, undermine the academic mission of colleges and universities. As noted by Matheson (2007), the athletes themselves “take easier (and sometimes academically worthless) courses, are graded less severely, and perform worse than their peers in the classroom despite the availability of special academic services, such as private tutoring, available only to athletes.” Athletics also potentially distracts attention from learning among the general student population. [See Sperber (2000), Shulman and Bowen (2001), Bowen and Levin (2003) and Fizel and Smaby (2004) among others.]

Of course, while the indirect costs and benefits of athletics are very important to consider, there is a notable lack of specific knowledge about the direct costs and benefits of athletic program which this paper attempts to address.

Accounting for Profits

While the idea of profits is conceptually easy, from an accounting standpoint, accurately measuring profits is not as simple as it first appears. This paper will report average profits for BCS schools, non-BCS schools with football, and non-BCS schools without football for the athletic programs overall, as well as for men's and women's basketball and men's football under a variety of different definitions of profit. While there are a handful of BCS schools without football teams (e.g. St. John's and Seton Hall), none appear in this sample. In addition, the number of teams that report a profit in each sport, as well as the profit for the overall program are reported.

The first measure of profit recorded in Table 3 is simply total reported revenues less total reported expenses. By this measure, athletic programs are highly profitable for major programs; football and basketball make money at major programs but not at smaller programs, and athletic programs overall are profitable at most (117 of 166) institutions, regardless of size.

This initial measure of profitability is unappealing, however, as it includes a variety of subsidies as revenues. Student fees assessed to students, direct support from the institution or the state government, and indirect support from the institution are all counted as revenues in the same way that ticket and concessions sales are counted. The second measure of profitability shown in Table 4 excludes these subsidies from revenues. The NCAA designates the remaining

revenues as “generated revenues”. The exclusion of subsidies paints an entirely different picture of the profitability of college athletics. Football and basketball programs at BCS schools still tend to be highly profitable at nearly every school, but athletic programs overall lose money at even the largest institutions. Even with football generating in excess of \$50 million per year at the highest revenue institutions, athletic departments only broke even at 15 of the 166 schools in the sample and overall lost nearly \$6 million on average. At non-BCS schools, even football and basketball rarely break even, and athletics overall show a deficit at every school.

Athletic programs are often supported by generous voluntary contributions by alumni and fans. Donations to the athletic department averaged \$4.5 million for the schools in the sample and exceeded \$10 million at nearly 1 out of the 6 schools surveyed. While athletic departments may increase contributions to the university, donations designated specifically to the athletic department may actually reduce donations to the rest of the school by causing potential donors to substitute away from the general fund to the athletic department. The magnitude of this substitution effect is unknown and generally unexplored in the academic literature, but anecdotal evidence suggests that the pool of general fund donors may be distinctly different from athletic donors. That being said, the measure of profit shown in Table 5 assumes that athletic donations are perfect substitutes for other contributions and shows profit generated as revenues less contributions less total expenses. By this measure, major football and basketball programs remain largely profitable, but athletic programs overall lose money at an average of over \$10 million per institution and but a single college athletic program, the University of Michigan, operates in the black by this measure.

The final measure of profit attempts to allocate expenses and revenues across sports in a

more reasonable fashion. Under the accounting methods used to report expenses and revenues to the NCAA, a large portion of both expenses and revenues are not allocated to specific sports. For example, an average of \$9.7 million of the \$23.5 million in total revenues (including subsidies) generated by the average athletic program is not allocated to a specific team and \$9.0 million of the \$22.8 million in expenses is not allocated to a specific team. Table 6 shows profit generated as revenues less expenses, with all non-program specific revenues and expenses allocated across teams based on the number of athletes in each specific sport. Obviously, this is not an ideal methodology for all accounts, but it can be used as an approximation. As seen in Table 6, this accounting method serves to reduce average profits within basketball and football by about 10%.

One other appealing measure of profit is not reported in the paper due to data difficulties, but at least the conceptual issues can be addressed. The reported expenses for student aid likely over-estimate the cost of the athletic program to colleges and universities. Student aid includes athletically related financial aid given to student athletes. Financial aid to athletes is considered a payment by the athletic department to other university functions (internal transfer payments) where the marginal cost could be at or near zero. To determine the actual costs to the university, the incremental costs incurred as a result of providing services in each receiving department must be determined (Skousen and Condie (1988), Goff (2004)). If a college is not at capacity, the incremental cost of adding a small number of scholarship athletes is likely to be significantly less than the full-tuition scholarship that is reflected on the universities books since the student would fit into existing classes and housing (Borland, Goff and Pulsinelli (1992)). Indeed, if the athlete at a below-capacity institution is offered only a half-tuition scholarship (athletes are commonly offered student aid packages that are a fraction of full tuition), paying the remaining tuition him

or herself, the school's revenues will increase due to the tuition payment by the athlete, and the school's profits may actually rise if the marginal cost of accommodating the athlete is sufficiently low. Of course, as noted previously, attracting prospective students, many of whom may be athletes, is one reason to have an athletic program in the first place.

Of course, while adding one additional student in an under-utilized college may be costless at the margin, few schools offer open enrollment to all applicants, suggesting that at a large percentage of colleges and universities, other paying students would have taken the place of the admitted athlete. Furthermore, athletic programs can be quite large, with up to one thousand student athletes. At small colleges with large athletic programs, the percentage of the study body participating in intercollegiate athletics can exceed 20%. Clearly, with such numbers, athletic programs cannot generally be considered to operate at the margins of enrollment, and average cost per student is likely to be a relatively accurate measure of the marginal cost of the student athletes in the program as a whole.

Further complicating the matter is the fact that non-athletes also commonly receive financial aid. In the case of an institution that is near capacity, in the absence of student athletes, presumably the other students who would have attended the university in their place would have likely received financial aid. The true net cost of the student aid given to athletes should not be the total cost of student athlete financial aid, but instead the incremental cost between the average aid package given to an athlete, compared to the average aid package given to a non-athlete. Obviously, the full ride scholarships given to promising players in major sports programs will exceed the typical financial aid package given to a regular student, but the average non-athlete still imposes financial aid costs upon the institution.

A simple numerical example illustrates some of the various scenarios that must be considered, and the difficulties involved in estimating the true cost of athletic scholarship aid. Suppose a university's full tuition is \$20,000 and that the average athlete receives an \$11,000 scholarship. The question to an economist or an accountant is, "What is the net cost to the institution of an athlete?" Under the accounting methodology used by most NCAA programs, the \$11,000 scholarship is treated as an \$11,000 expense for student aid. The true net cost is much harder to disentangle.

Under the methodology of Borland, Goff and Pulsinelli (1992), at an institution that is below capacity, the university should be credited with revenues of \$9,000, the remainder of the athlete's tuition not covered by scholarship, less the marginal cost of providing the athlete with an education at the institution, which they argue is typically low. Rather than placing a cost on the university, the athlete actually may generate tuition revenues in excess of the marginal cost of his or her education. Mathematically, $\text{net cost} = \text{student aid} - \text{full tuition} + \text{marginal cost}$. Net cost will be negative, representing a gain rather than a cost to the university, if the net tuition remaining after student aid is offered, is larger than the marginal cost of providing education.

One should not be so quick to presume low marginal costs of education services provided to student athletes, however. As noted previously, athletic programs will often be large enough that it is not reasonable to presume that each athlete can be treated as a student at the margin. Furthermore, on the assumption that a college or university has made a conscious decision about optimal class sizes, adding students will quickly result in significant additional costs to the university in order to bring class sizes back to optimum, or alternatively the larger class sizes impose implicit costs on other students and faculty. Therefore, in the context of the athletic

department or sports teams as a whole, in many cases it would be more reasonable to assume a cost per athlete closer to the average cost of education rather than a low marginal cost. Of course, such an assumption will result in costs much closer to the price of full tuition. In addition, due to funds provided by donors, endowment or investment returns, grant money, and state appropriations at many colleges and universities, the average cost for educating a student is well in excess of the full-tuition price. To summarize, if the average cumulative marginal cost of providing educational services to a group of athletes is equal to the average cost of providing education to the student body as a whole, and if the average cost is equal to full tuition, then the net cost of athletic aid is simply equal to the size of the student aid award. Otherwise, the average cumulative marginal cost of educating a group of athletes may be either above or below full tuition, depending on the specific conditions of the institution.

The preceding argument has assumed that a scholarship athlete will simply be added to the student body as a whole, while at any institution with selective admissions a student athlete will simply displace another student. The fact that other students may also receive financial aid, however, serves to provide a further complication. Suppose a typical student at the previous hypothetical university receives \$5,000 in scholarship aid while the average athlete still receives an \$11,000 athletic scholarship. Again, for NCAA purposes, the \$11,000 scholarship is treated as an \$11,000 athletic expense for student aid, but the true net cost is more complicated.

Because the athlete displaces a non-athlete student, admitting the athlete should be treated as an opportunity cost, as the university has foregone the opportunity to admit a student who could pay up to \$20,000 in tuition. In practice, however, the foregone student is likely to pay only \$15,000 in tuition versus the \$9,000 in tuition that the scholarship athlete pays. The true cost of

the athlete's scholarship is not the \$11,000 reported as financial aid, but instead is the difference between the average student aid award to the athlete less the average student aid awarded to the non-athlete, or \$6,000 in this case. Because student athletes are eligible for any scholarship awards provided to students in general, and are also eligible for student aid based on athletic ability, unless athletes are drawn from significantly different populations than non-athletes, the average athletic student aid award will be larger than the average non-athlete scholarship. It also stands to reason, however, that the net cost of athletic aid in comparison to the average displaced student is smaller than the figures reported to the NCAA.

With the data available from the sources used in this paper, it is impossible to estimate the average cost or marginal cost of providing educational opportunities for student athletes, and it is similarly impossible to estimate the difference between the average financial aid package offered to athletes and non-athletes at the colleges and universities examined to any degree of accuracy. In order to provide some context, however, Table 7 provides profitability data for the schools in the sample assuming student aid costs of zero and including only generated revenues in profit calculations (analogous to Table 4). Under this assumption, one of two things must be true. Either (1) the average scholarship award for a non-athlete is the same as that for an athlete (in the case of schools at capacity); or (2) the average marginal cost of educating all athletes at the school is equal to the average remaining tuition paid by athletes after the award of student aid (in the case of schools below capacity).

As noted previously, Borland, Goff and Pulsinelli (1992) would argue that in some cases student athletes might actually generate positive tuition revenue in excess of educational costs, so these figures do not represent a theoretical upper bound for program profitability. Similarly, if the

average non-athlete commands more student aid than the typical athlete, again these figures do not represent a theoretical upper bound for program profitability. Nevertheless, for most reasonable assumptions regarding student aid, these figures represent the maximum profit level that could be ascribed to an athletic program, and likely significantly overestimate profit just as the comparable figures in Table 4 serve to underestimate profits.

As can be seen in Table 7, even when the costs of student aid are completely excluded from athletic program budgets, the story is quite similar to that described earlier. When subsidies and transfers are excluded from athletic department revenues and only generated revenues are counted, football and basketball programs at BCS schools again tend to be highly profitable at nearly every school. In addition, athletic programs at BCS schools break even more often than not, with 41 out of 51 BCS athletic departments showing an average profit of over \$4 million. Outside the BCS, however, even with the most generous treatment of student aid, 112 out of the remaining 115 athletic departments failed to generate revenues sufficient to cover their expenses, and even in the top revenue sports of football and men's basketball showed a profit in only about 20% of cases. Again, even if the costs of athletic scholarships are completely excluded from consideration, athletic departments outside the top conferences are a net drain on the finance resources of their host institutions.

Conclusions

This paper examines the profitability of Division I athletic programs at colleges and universities in the United States under a variety of accounting definitions of profit. The data identify several broad themes. First, a majority of athletic departments rely heavily on direct and

indirect subsidization of their programs by the student body, the institution itself, and state governments in order to balance their books. Without such funding, less than a third of BCS athletic departments and no non-BCS departments are in the black. Second, athletic programs rely heavily on contributions to balance their books. Donations to athletic department may serve as a substitute for donations to the rest of the university, lowering giving to other programs. Third, football and men's basketball programs are generally highly profitable at BCS schools, but below this top tier, fewer than 10% of football programs and 15% of men's basketball programs make money. Finally, properly accounting for expenditures on financial aid to student athletes is highly problematic, but even excluding the cost of athletic scholarships from athletic departments' financial statements does not alter the conclusion that profits are rare at schools that compete at a level below the major BCS schools, even in the revenue sports of basketball and football.

It is important to note that revenue generation is not the sole or even perhaps the primary reason for colleges and universities to host intercollegiate athletic programs. Athletics provide students a valuable entertainment option, and participation in sports can be thought of as an educational experience in and of itself. Athletic competitions allow alumni to connect with their alma mater in a tangible manner and raise the visibility of the college to both funding agencies and the public in general (Humphreys, 2006). However, it is also beyond question that many see intercollegiate sports programs as a cash cow for colleges and universities, and this paper clearly shows that these widely held beliefs are generally false. Under most reasonable accounting measures, athletic programs typically fail to provide significant revenues in excess of expenditures, even at the largest and most successful universities. At smaller colleges, athletics

are a net cost to the institution, and even the so-called revenue sports of football and men's basketball require subsidies to balance their books. While there are potentially many good reasons to have an athletic program, profit generation is not one of them.

REFERENCES

- Arellano, M. and Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *Review of Economic Studies* 58, 277-97.
- Amato, L. H., Gandar, J. M., Tucker, I. B., and Zuber, R. A. (1996). Bowls versus playoffs: The impact on football player graduation rates in the National Collegiate Athletic Association. *Economics of Education Review* 15 (2), 187-195.
- Amato, L. H., Gandar, J. M., and Zuber, R. A. (2001). The impact of Proposition 48 on the relationship between football success and football player graduation rates. *Journal of Sports Economics* 2 (2), 101-112.
- Baade, R. and Sundberg, J. (1994). Fourth down and gold to go? Assessing the link between athletics and alumni giving. *Social Science Quarterly* 77(4), 789-803.
- Borland, M.V., Goff, B.L. and Pulsinelli, R.W. (1992). College Athletics: Financial Burden or Boom? *Advances in the Economics of Sports*, ed.G. Sculley, Greenwich, CT: JAI Press, 215-235.
- Bowen, W. G. and Levin, S. A. (2003). *Reclaiming the game*. Princeton, NJ: Princeton University Press.
- Department of Education (2010). Office of Postsecondary Education Equity in Athletics Data Analysis Cutting Tool Website, <http://ope.ed.gov/athletics/>, accessed June 1, 2010.
- Fizel, J.L. and Smaby, T. (2004). Participation in College Athletics and Academic Performance. *Economics of College Sports*, eds. J Fizel and R. Fort, Westport CT: Praeger, 163-173.

- Goff, B. L. (2004). Effects of University Athletics on the University: A Review and Extension of Empirical Assessment. *Economics of College Sports*, eds. J Fizek and R. Fort, Westport CT: Praeger, 65-85.
- Grimes, P. and Chressanthis, G. (1994). Alumni contributions to academics: the role of intercollegiate sports and NCAA sanctions. *American Journal of Economics and Sociology* 53(1), 27-40.
- Humphreys B.R. (2006). The Relationship Between Big-Time College Football and State Appropriations to Higher Education, *International Journal of Sport Finance*, Vol. 1:2, 119-128.
- Humphreys, B.R. and Mondello, M. (2007). Intercollegiate Athletic Success and Donations at NCAA Division I Institutions. *Journal of Sports Management* (21), 265-280.
- IndyStar (2010). NCAA Financial Reports Database 2004-2005, http://www2.indystar.com/NCAA_financial_reports/, accessed June 1, 2010.
- Matheson, V. (2007). Research Note: Athletic Graduation Rates and Simpson's Paradox. *Economics of Education Review*, Vol. 26:4, 516-520.
- McCormick, R. E. and Tinsley, M. (1987). Athletics versus academics? Evidence from SAT cores. *Journal of Political Economy* 95, 1103-1116.
- Mondello, M. and Rishe, P. (2004). Comparative Economic Impact Analyses: Differences across Cities, Events, and Demographics. *Economic Development Quarterly*, 18(4), 331-42.
- Murphy, R. G., and Trandel, G.A. (1994). The relation between a university's football record and the size of its applicant pool. *Economics of Education Review* 13 (3), 265-270.

- National Intercollegiate Athletic Association (2008). NCAA Revenues and Expenses of Division I Intercollegiate Athletics Programs Report 2004 through 2008. NCAA Publications, www.ncaa.org.
- Pope, D.G. and Pope, J.C. (2009). The Impact of College Sports Success on the Quantity and Quality of Student Applications. *Southern Economic Journal* 75(3), 750-780.
- Rhoads, T. and Gerking, S. (2000) Educational contributions, academic quality, and athletic success. *Contemporary Economic Policy* 18(2), 248-258.
- Rishe, P. J. (2003). A reexamination of how athletic success impacts graduation rates: comparing student-athletes to all other undergraduates. *American Journal of Economics and Sociology* 62 (2), 407-421.
- Sheehan, R.G. (1996). *Keeping Score*. Southbend, IN: Diamond Communications.
- Shulman, J. L., and Bowen, W. G. (2001). *The game of life*. Princeton, NJ: Princeton University Press.
- Siegelman, L. and Carter, R. (1979). Win one for the giver? Alumni giving and big-time college sports. *Social Science Quarterly* 60(2), 284-294.
- Siegelman, L. and Bookheimer, S. (1983). Is it whether you win or lose? Monetary contributions to big-time college athletic programs. *Social Science Quarterly* 64(2), 347-359.
- Skousen, C.R. and Condie, F.A. (1988). Evaluating a Sports Program: Goalposts vs. Test Tubes. *Managerial Accounting* 60, 43-49
- Sperber, M. (2000). *Beer and circus*. New York: Henry Holt and Company.
- Toma, J. D. and Cross, M. (1996). Intercollegiate athletics and student college choice: Understanding the impact of championship season on the quantity and quality of

- undergraduate applicants. ASHE Annual Meeting paper.
- Tucker, I. B. (1992). The impact of big-time athletics on graduation rates. *Atlantic Economic Journal* 20 (4), 65-72.
- Tucker, I. B. (2004). A reexamination of the effect of big-time football and basketball success on graduation rates and alumni giving rates. *Economics of Education Review* 23 (6), 655-661.
- Tucker, I. B. (2005). Big-time pigskin success: Is there an advertising effect? *Journal of Sports Economics* 6 (2), 222-229.
- Tucker, I. B. and Amato, L. (1993). Does big-time success in football or basketball affect SAT scores? *Economics of Education Review* 12 (2), 177-181.

Table 1: Sample Detailed Revenues and Expenses for Appalachian State

<u>Revenues</u>	<u>Football</u>	<u>Men's Basketball</u>	<u>Women's Basketball</u>	<u>Other</u>	<u>Non Program Specific</u>	<u>Total</u>
Ticket Sales	\$404,216	\$52,283	\$1,781	\$0	\$0	\$458,280
Student Fees	\$0	\$0	\$0	\$0	\$4,360,796	\$4,360,796
Guarantees	\$175,000	\$150,000	\$12,500	\$10,100	\$0	\$347,600
Contributions	\$28,310	\$10,865	\$10,765	\$46,813	\$748,873	\$845,626
Third Party Support	\$0	\$0	\$0	\$0	\$0	\$0
Government Support	\$0	\$0	\$0	\$0	\$0	\$0
Direct Institutional Support	\$7,557	\$5,700	\$1,900	\$125,461	\$37,351	\$177,969
Indirect Institutional Support	\$0	\$0	\$0	\$0	\$320,736	\$320,736
NCAA/Conference Distributions	\$0	\$0	\$0	\$2,326	\$362,655	\$364,981
Individual School Media Rights	\$0	\$0	\$0	\$0	\$0	\$0
Concessions, Programs, Parking	\$53,964	\$0	\$0	\$0	\$6,885	\$60,849
Advertisements & Sponsorship	\$0	\$0	\$225	\$0	\$349,382	\$349,607
Sports Camps	\$0	\$0	\$0	\$0	\$0	\$0
Endowments/Investments	\$0	\$0	\$540	\$36,955	\$24,616	\$62,111
<u>Other Revenues</u>	<u>\$9,500</u>	<u>\$4,220</u>	<u>\$0</u>	<u>\$56,261</u>	<u>\$215,695</u>	<u>\$285,676</u>
Subtotal	\$678,547	\$223,068	\$27,711	\$277,916	\$6,426,989	\$7,634,231
<u>Expenses</u>	<u>Football</u>	<u>Men's Basketball</u>	<u>Women's Basketball</u>	<u>Other</u>	<u>Non Program Specific</u>	<u>Total</u>
Student Aid	\$888,027	\$183,575	\$221,341	\$950,803	\$0	\$2,243,746
Guarantees	\$50,000	\$7,500	\$250	\$0	\$0	\$57,750
Salaries	\$527,997	\$241,799	\$199,102	\$894,689	\$0	\$1,863,587
Other Coaches' Comp.	\$0	\$0	\$0	\$0	\$0	\$0
Support Staff Salaries	\$0	\$0	\$0	\$0	\$1,178,454	\$1,178,454
Other Support Staff Comp	\$0	\$0	\$0	\$0	\$0	\$0
Severance Payments	\$0	\$0	\$0	\$0	\$0	\$0
Recruiting	\$77,449	\$46,082	\$37,740	\$59,369	\$44,146	\$264,786
Team Travel	\$74,237	\$56,301	\$48,406	\$295,753	\$118,172	\$592,869
Equipment	\$103,812	\$21,031	\$20,988	\$147,528	\$91,744	\$385,103
Game Expenses	\$43,975	\$36,615	\$23,516	\$42,661	\$0	\$146,767
Promotion	\$0	\$0	\$0	\$1,630	\$88,101	\$89,731
Sports Camp	\$0	\$0	\$0	\$0	\$0	\$0
Facilities, Maintenance	\$5,279	\$8	\$394	\$4,190	\$20,797	\$30,668
Spirit Groups	\$0	\$0	\$0	\$0	\$18,304	\$18,304
Indirect Institutional Support	\$7,557	\$5,700	\$1,900	\$32,300	\$320,736	\$368,193
Medical	\$0	\$0	\$0	\$0	\$186,852	\$186,852
Memberships	\$950	\$3,675	\$4,440	\$8,094	\$7,794	\$24,953
<u>Other Operating Expenses</u>	<u>\$143,038</u>	<u>\$0</u>	<u>\$15,669</u>	<u>\$38,391</u>	<u>\$363,071</u>	<u>\$560,169</u>
Total Operating Expenses	\$1,922,321	\$602,286	\$573,746	\$2,475,408	\$2,438,171	\$8,011,932
Expense to Revenue Difference	-1,243,774	-379,218	-546,035	-2,197,492	\$3,988,818	-377,701

Table 2: Schools in sample

School	Conference	BCS	Football
Appalachian State	Southern Conference	No	Yes
Arizona State	Pacific-10 Conference	Yes	Yes
Auburn University	Southeastern Conference	Yes	Yes
Ball State	Mid-American Conference	No	Yes
Boise State	Western Athletic Conference	No	Yes
Bowling Green State	Mid-American Conference	No	Yes
California Poly State	Big West Conference	No	Yes
California State	Big West Conference	No	No
Central Connecticut State	Northeast Conference	No	Yes
Central Michigan University	Mid-American Conference	No	Yes
Clemson University	Atlantic Coast Conference	Yes	Yes
Cleveland State	Horizon League	No	No
Coastal Carolina University	Big South Conference	No	Yes
College of Charleston	Southern Conference	No	No
College of William and Mary	Colonial Athletic Association	No	Yes
Colorado State	Mountain West Conference	No	Yes
East Carolina University	Conference USA	No	Yes
Eastern Illinois University	Ohio Valley Conference	No	Yes
Eastern Kentucky University	Ohio Valley Conference	No	Yes
Eastern Michigan University	Mid-American Conference	No	Yes
Eastern Washington University	Big Sky Conference	No	Yes
Florida Atlantic University	Sun Belt Conference	No	Yes
Florida International University	Sun Belt Conference	No	Yes
Florida State	Atlantic Coast Conference	Yes	Yes
Fresno State	Western Athletic Conference	No	Yes
George Mason University	Colonial Athletic Association	No	No
Georgia Southern University	Southern Conference	No	Yes
Georgia State	Colonial Athletic Association	No	No
Georgia Tech	Atlantic Coast Conference	Yes	Yes
Idaho State	Big Sky Conference	No	Yes
Illinois State	Missouri Valley Conference	No	Yes
Indiana State	Missouri Valley Conference	No	Yes
Indiana University	Big Ten Conference	Yes	Yes
Iowa State	Big 12 Conference	Yes	Yes
IU - Purdue University (Fort Wayne)	The Summit League	No	No
IU - Purdue University at Indianapolis	The Summit League	No	No
Jacksonville State	Ohio Valley Conference	No	Yes

James Madison University	Colonial Athletic Association	No	Yes
Kansas State	Big 12 Conference	Yes	Yes
Kent State	Mid-American Conference	No	Yes
Lamar University	Southland Conference	No	No
Long Beach State	Big West Conference	No	No
Louisiana State	Southeastern Conference	Yes	Yes
Louisiana Tech	Western Athletic Conference	No	Yes
Marshall University	Conference USA	No	Yes
Miami University (Ohio)	Mid-American Conference	No	Yes
Michigan State	Big Ten Conference	Yes	Yes
Mississippi State	Southeastern Conference	Yes	Yes
Missouri State	Missouri Valley Conference	No	Yes
Montana State	Big Sky Conference	No	Yes
Morehead State	Ohio Valley Conference	No	Yes
Murray State	Ohio Valley Conference	No	Yes
New Mexico State	Western Athletic Conference	No	Yes
Nicholls State	Southland Conference	No	Yes
Norfolk State	Mid-Eastern Athletic Conference	No	Yes
North Carolina State	Atlantic Coast Conference	Yes	Yes
Northern Arizona University	Big Sky Conference	No	Yes
Northwestern State	Southland Conference	No	Yes
Oakland University	The Summit League	No	No
Ohio State	Big Ten Conference	Yes	Yes
Ohio University	Mid-American Conference	No	Yes
Old Dominion University	Colonial Athletic Association	No	No
Oregon State	Pacific-10 Conference	Yes	Yes
Purdue University	Big Ten Conference	Yes	Yes
Rutgers	Big East Conference	Yes	Yes
Sacramento State	Big Sky Conference	No	Yes
Sam Houston State	Southland Conference	No	Yes
San Diego State	Mountain West Conference	No	Yes
San Jose State	Western Athletic Conference	No	Yes
Southeast Missouri State	Ohio Valley Conference	No	Yes
Southern Illinois University	Missouri Valley Conference	No	Yes
State University of NY - Binghamton	America East Conference	No	No
Stephen F. Austin State University	Southland Conference	No	Yes
Texas A&M University	Big 12 Conference	Yes	Yes
Texas State - San Marcos	Southland Conference	No	Yes
Texas Tech University	Big 12 Conference	Yes	Yes
The Citadel	Southern Conference	No	Yes

Toledo University	Mid-American Conference	No	Yes
Towson State	Colonial Athletic Association	No	Yes
Troy State	Sun Belt Conference	No	Yes
University at Albany	America East Conference	No	Yes
University at Buffalo	Mid-American Conference	No	Yes
University of Akron	Mid-American Conference	No	Yes
University of Alabama - Birmingham	Conference USA	No	Yes
University of Alabama - Tuscaloosa	Southeastern Conference	Yes	Yes
University of Arizona	Pacific-10 Conference	Yes	Yes
University of Arkansas	Southeastern Conference	Yes	Yes
University of Arkansas - Little Rock	Sun Belt Conference	No	No
University of Arkansas - Pine Bluff	Southwestern Athletic Conference	No	Yes
University of California-Berkeley	Pacific-10 Conference	Yes	Yes
University of California-Irvine	Big West Conference	No	No
University of California-Los Angeles	Pacific-10 Conference	Yes	Yes
University of California-Riverside	Big West Conference	No	No
University of California-Santa Barbara	Big West Conference	No	No
University of Central Florida	Conference USA	No	Yes
University of Cincinnati	Big East Conference	Yes	Yes
University of Colorado	Big 12 Conference	Yes	Yes
University of Connecticut	Big East Conference	Yes	Yes
University of Florida	Southeastern Conference	Yes	Yes
University of Georgia	Southeastern Conference	Yes	Yes
University of Hawaii	Western Athletic Conference	No	Yes
University of Houston	Conference USA	No	Yes
University of Idaho	Western Athletic Conference	No	Yes
University of Illinois	Big Ten Conference	Yes	Yes
University of Illinois-Chicago	Horizon League	No	No
University of Iowa	Big Ten Conference	Yes	Yes
University of Kansas	Big 12 Conference	Yes	Yes
University of Kentucky	Southeastern Conference	Yes	Yes
University of Louisiana-Lafayette	Sun Belt Conference	No	Yes
University of Louisiana-Monroe	Sun Belt Conference	No	Yes
University of Louisville	Big East Conference	Yes	Yes
University of Maine	America East Conference	No	Yes
University of Maryland	Mid-Eastern Athletic Conference	Yes	Yes
University of Maryland-Baltimore County	America East Conference	No	No
University of Maryland-Eastern Shore	Atlantic Coast Conference	No	No
University of Massachusetts	Atlantic 10 Conference	No	Yes
University of Memphis	Conference USA	No	Yes

University of Michigan	Big Ten Conference	Yes	Yes
University of Minnesota	Big Ten Conference	Yes	Yes
University of Mississippi	Southeastern Conference	Yes	Yes
University of Missouri	Big 12 Conference	Yes	Yes
University of Missouri-Kansas City	The Summit League	No	No
University of Montana	Big Sky Conference	No	Yes
University of Nebraska	Big 12 Conference	Yes	Yes
University of Nevada	Western Athletic Conference	No	Yes
University of Nevada-Las Vegas	Mountain West Conference	No	Yes
University of New Hampshire	America East Conference	No	Yes
University of New Mexico	Mountain West Conference	No	Yes
University of North Carolina	Atlantic Coast Conference	Yes	Yes
University of North Carolina-Asheville	Big South Conference	No	No
University of North Carolina-Charlotte	Atlantic 10 Conference	No	No
University of North Carolina-Greensboro	Southern Conference	No	No
University of North Carolina-Wilmington	Colonial Athletic Association	No	No
University of North Texas	Sun Belt Conference	No	Yes
University of Northern Iowa	Missouri Valley Conference	No	Yes
University of Oregon	Pacific-10 Conference	Yes	Yes
University of Rhode Island	Atlantic 10 Conference	No	Yes
University of South Alabama	Sun Belt Conference	No	No
University of South Carolina	Atlantic Sun Conference	Yes	Yes
University of South Florida	Big East Conference	Yes	Yes
University of Southern Mississippi	Conference USA	No	Yes
University of Tennessee	Southern Conference	Yes	Yes
University of Texas	Big 12 Conference	Yes	Yes
University of Texas-Arlington	Southland Conference	No	No
University of Texas-El Paso	Conference USA	No	Yes
University of Texas-Pan American	Independent	No	No
University of Texas-San Antonio	Southland Conference	No	No
University of Utah	Mountain West Conference	No	Yes
University of Virginia	Atlantic Coast Conference	Yes	Yes
University of Washington	Pacific-10 Conference	Yes	Yes
University of Wisconsin	Big Ten Conference	Yes	Yes
University of Wisconsin-Green Bay	Horizon League	No	No
University of Wisconsin-Milwaukee	Horizon League	No	No
University of Wyoming	Mountain West Conference	No	Yes
Utah State University	Western Athletic Conference	No	Yes
Utah Valley State College	Independent	No	No
Virginia Commonwealth University	Colonial Athletic Association	No	No

Virginia Tech University	Atlantic Coast Conference	Yes	Yes
Washington State University	Pacific-10 Conference	Yes	Yes
West Virginia University	Big East Conference	Yes	Yes
Western Carolina University	Southern Conference	No	Yes
Western Illinois University	The Summit League	No	Yes
Western Kentucky University	Sun Belt Conference	No	Yes
Wichita State University	Missouri Valley Conference	No	No
Winthrop University	Big South Conference	No	No
Youngstown State University	Horizon League	No	Yes

Table 3: Total revenues less total expenses				
Average Profit/(Loss)				
	Football	Men's Basketball	Women's Basketball	Total
BCS Schools	11,019,708	3,714,375	(1,244,778)	1,913,605
Non-BCS Schools	(737,682)	(97,199)	(417,274)	209,326
Non-BCS Schools (No Football)	N/A	(249,946)	(393,974)	(95,011)
Total	3,804,946	1,042,541	(666,735)	670,596

Number of Profitable Schools					
	Football	Men's Basketball	Women's Basketball	Total	Number of Schools
BCS Schools	45	46	3	37	51
Non-BCS Schools	20	30	12	59	81
Non-BCS Schools (No Football)	N/A	13	6	21	34
Total	65	89	21	117	166

Table 4: Generated Revenues less total expenses				
Average Profit/(Loss)				
	Football	Men's Basketball	Women's Basketball	Total
BCS Schools	10,782,886	3,683,066	(1,339,599)	(2,214,563)
Non-BCS Schools	(1,479,385)	(335,991)	(669,823)	(7,716,253)
Non-BCS Schools (No Football)	N/A	(578,936)	(683,668)	(5,802,761)
Total	3,258,310	849,020	(878,433)	(5,634,055)

Number of Profitable Schools					
	Football	Men's Basketball	Women's Basketball	Total	Number of Schools
BCS Schools	45	47	2	15	51
Non-BCS Schools	6	13	2	0	81
Non-BCS Schools (No Football)	N/A	3	0	0	34
Total	51	63	4	15	166

Table 5: Generated Revenues less contributions and total expenses				
Average Profit/(Loss)				
	Football	Men's Basketball	Women's Basketball	Total
BCS Schools	6,459,018	2,879,478	(1,599,743)	(13,860,441)
Non-BCS Schools	(1,723,945)	(457,486)	(698,906)	(9,234,404)
Non-BCS Schools (No Football)	N/A	(629,084)	(695,739)	(6,560,890)
Total	1,437,655	532,579	(975,020)	(10,108,069)

Number of Profitable Schools					
	Football	Men's Basketball	Women's Basketball	Total	Number of Schools
BCS Schools	41	45	1	1	51
Non-BCS Schools	5	9	0	0	81
Non-BCS Schools (No Football)	N/A	3	0	0	34
Total	46	57	1	1	166

Table 6: Generated revenues less expenses w/allocated non-program specific items					
Average Profit/(Loss)					
	Football	Men's Basketball	Women's Basketball	Other	Total
BCS Schools	9,453,284	3,406,382	(1,580,699)	(13,506,756)	(2,214,563)
Non-BCS Schools	(1,956,924)	(406,460)	(737,636)	(4,615,542)	(7,716,253)
Non-BCS Schools (No Football)	N/A	(678,572)	(772,778)	(4,345,706)	(5,802,761)
Total	2,451,566	709,221	(1,003,847)	(7,291,912)	(5,634,055)

Number of Profitable Schools						
	Football	Men's Basketball	Women's Basketball	Other	Total	Number of Schools
BCS Schools	46	45	2	0	15	51
Non-BCS Schools	3	9	1	0	0	81
Non-BCS Schools (No Football)	N/A	2	0	0	0	34
Total	49	56	3	0	15	166

Table 7: Generated revenues less expenses excluding student aid					
Average Profit/(Loss)					
	Football	Men's Basketball	Women's Basketball	Other	Total
BCS Schools	12,698,494	3,998,707	(998,758)	(4,155,408)	4,060,957
Non-BCS Schools	(391,532)	(110,380)	(443,750)	(1,584,667)	(4,494,767)
Non-BCS Schools (No Football)	N/A	(335,679)	(434,022)	(1,429,422)	(3,962,866)
Total	3,710,296	1,105,905	(612,272)	(2,342,676)	(1,757,258)

Number of Profitable Schools						
	Football	Men's Basketball	Women's Basketball	Other	Total	Number of Schools
BCS Schools	49	49	3	1	41	51
Non-BCS Schools	16	20	1	0	3	81
Non-BCS Schools (No Football)	N/A	3	0	0	0	34
Total	65	72	4	0	44	166