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The Star Wars Arms Race in College Athletics: Coaches' Pay and Athletic Program Status

William Tsitsos[1] and Howard L. Nixon II[1]

Abstract

This study focuses on a "star wars arms race" concerning escalating head coaches' salaries in the biggest of the big-time college sports in the United States, football and men's basketball. Data are presented from six seasons since 2003 testing the assumption that paying top salaries to coaches assures or improves success on the field and in the rankings. The data concerning rankings and mobility into and out of the "Top 25" for teams with the top-paid football and men's basketball coaches show that institutions paying the highest salaries to head coaches of these sports are not assured of having highly ranked teams. Policy issues and implications of the star wars arms race for college sports and higher education institutions are discussed.

Keywords

arms race, coaches' salaries, college sports

Introduction

Although college sports exist in other countries, they are distinctive in the United States in the scope and formality of their organization, in their competitive intensity, and in their commercialization. The commercialism in U.S. higher education may have begun with the first recognized college sports event—a crew race between Harvard and Yale students on a lake in New Hampshire in 1851 or 1852. However, this sports contest was not controlled by the universities that these "student athletes" attended. University control of intercollegiate athletics emerged during the ensuing

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decades of the 19th century as colleges and universities appropriated athletics from students and began using them for institutional purposes—such as recruiting students, building alumni support, attracting and entertaining donors and the public, and building campus morale. Colleges and universities also began charging for admission and paying coaches in the 19th century as college athletics increasingly became immersed in a commercial athletic marketplace. This commercial athletic marketplace has evolved into the 21st century.

We now refer to "big-time" intercollegiate athletics involving investments of many millions of dollars in the operations, staffing, facilities, and student athletes in college sports (Clotfelter, 2011). In this contemporary highly commercialized world of college sports, there have developed intense competitions off the athletic field called *arms races* (Edwards, 1984; Litan, Orszag, & Orszag, 2003; Orszag & Israel, 2009; Orszag & Orszag, 2005), wherein "increased operating expenditures by schools in a conference are associated with increases at other schools in the same conference" (Orszag & Israel, 2009, p. 11). We call this competition the *star wars* when it involves the payment of coaches. This phenomenon parallels the star wars for presidents and big-name "rainmaker" professors, but the compensation packages for coaches at the most athletically ambitious institutions have been bigger and are escalating at a more rapid rate.

Compensation for the head coaches of big-time college football and men's college basketball has become a central issue in the public discussion of the arms race in college sport (Brady & Upton, 2007; Powers, 2007; Sanserino, 2011; Sloan, 2007; Suggs, 2002, 2004; Upton, Gillum, & Berkowitz, 2010; Upton & Wieberg, 2006; Wieberg, Upton, Perez, & Berkowitz, 2009). The star wars competition for successful coaches who can elevate athletic programs or assure their continuing dominance has become intense enough to result in multimillion dollar annual compensation packages for the most sought-after coaches. Basic questions can be asked about the rationale for the arms race of extravagant and escalating spending on coaches and how this spending relates to institutional priorities. One such question concerns the fundamental assumption behind these increasing salaries, specifically, the assumption that higher salaries translate into athletic success.

Others (Litan et al., 2003; Orszag & Israel, 2009; Orszag & Orszag, 2005) have conducted analyses using salary and team performance data from as recently as 2007. They failed to find a relationship between coaches' salaries and winning percentage. Our analyses, however, use the most recent data available, through the 2010 and 2011 college football and men's basketball seasons, respectively. In addition, we have attempted to make our analyses as accessible as possible to readers who may be unfamiliar with the statistical techniques used by past researchers. Also, unlike previous analysts, we concentrated specifically on whether participating in the star wars arms race has had the desired pay-offs in athletic success and prestige for athletic programs and their universities.

We will begin by examining recent examples of dramatic salary increases for college football and men's basketball coaches and then consider widely held views about

college athletics that could be construed as support or justifications for athletic spending by universities. After that, we examine athletic success indicators of programs with the highest paid coaches in football and men's basketball, to answer the main research question raised above: Do big-time financial investments in coaches "pay off" in terms of athletic success and prestige? That is, does giving a coach a "(super)star's" salary assure institutions of the boost in rankings and championships to which they aspire? Our data indicate that the answer to this question is "no," when we consider the level of success of the best paid coaches after they have signed their lucrative contracts. After presenting our findings, we discuss the implications of the athletic arms race, particularly concerning escalating compensation for coaches in big-time college sports, for competition on the field as well as in the college athletic marketplace.

The Star Wars Arms Race for Big-Time College Coaches

With his 2007 contract worth US$32 million over 8 years, plus a possible additional US$800,000 per year in incentive payments, University of Alabama football coach Nick Saban raised the compensation bar to a significantly higher level. To put the US$4 million annual salary of the then-new Alabama coach in perspective, it not only was the biggest compensation package for a head coach in college sports but also was more than the combined annual salary and bonus paid to any CEO of an Alabama company traded on the stock market at the time. Furthermore, it was nearly US$3.5 million more than the annual total compensation of US$573,000 earned by the president of his institution (Executive compensation, 2006). At least, one former University of Alabama trustee thought this salary was too high (Hubbard, 2007). He was not alone because the NCAA president and a number of college presidents have raised concerns about the rising salaries in college athletics. Although Saban's pay was the top of the coaches' salary hierarchy at the time, at least 42 of the 119 head coaches in the NCAA Football Bowl Subdivision (formerly I-A) earned US$1 million or more, and this was an increase over the five US$1 million college football coaches in 1999 (Wolverton, 2006). More recently, the 25 highest paid football coaches in the 2010 *USA Today* compensation survey (Dougherty, Hatch, Jarmul, Thomassie, & Penn, 2010) earned between US$1.925 million (Oklahoma State) and US$5.17 million (Alabama).

Salaries are generally not quite as high in men's college basketball as in football, but the basketball marketplace still has its star wars arms race for coaches. Prior to the 2007 Final Four tournament in men's college basketball, the best paid coach in the sport was the Kentucky coach, Tubby Smith, who earned nearly US$2.2 million. The University of Kentucky arguably has the highest expectations for its basketball coach and team, but in the years leading up to 2007, Smith's teams had faltered, finishing outside the Top 25. Following that year's Final Four tournament, Tubby Smith moved to the University of Minnesota, where he was guaranteed US$1.7 per year and could supplement that amount with up to US$1.4 million in incentive pay. He was replaced

at the University of Kentucky by the Texas A&M coach, Billy Gillispie, who was guaranteed US$2.3 million annually and had incentives up to US$850,000 per year. To put these numbers in a historical perspective and to validate further the idea of an arms race, Joe Hall was given a raise as the University of Kentucky coach after his 1978 team won the national championship. His new salary was US$40,000, which was equivalent to approximately US$125,000 in 2007. The inflation-adjusted amount is less than one third of Billy Gillispie's base salary and a little over 5% of the new coach's guaranteed pay (Infante, 2007a). Billy Gillispie is no longer the coach at Kentucky, and the base salary of the current coach, John Calipari, is even higher (US$3.8 million). This figure places Kentucky toward the top of the salary hierarchy for men's basketball coaches. The 25 highest paid coaches in the 2011 NCAA men's basketball tournament earned between US$1.35 million (Syracuse) and US$6.1 million (Louisville) in 2011 (Dougherty & Thomassie, 2011).

University officials, trustees, and athletic boosters often justify escalating compensation in terms of the "realities of the marketplace" and a "more investment equals more wins" rationale. They know that "big-name" college coaches with track records of major successes are likely to attract the top-level recruits who make programs successful. Research has revealed a self-reinforcing cycle at the top level of college football in which recruiting significantly affects success on the field and competitive success leads to better recruits (Langelett, 2003). This evidence helps us understand why institutions are drawn into the star wars arms race, as they seek the star, or rising star, coaches who will be able to recruit the talented athletes needed to win and attract more talented recruits in the future. In other words, the star wars arms race exists because athletic directors and their institutions feel compelled to spend "whatever it takes" to hire and retain coaches with records or prospects of major success because they will attract the most talented recruits who are the ultimate key to competitive success. As we will discuss next, this belief that spending more means winning more is shared by much of the public, despite a lack of evidence.

Opinions, Myths, and Realities of College Athletics

As the star wars arms race has escalated and the costs of big-time college sports programs have significantly increased over the past two decades, the U.S. public has had some concerns, but nevertheless has expressed strong support for college sports. In December 2005, the Knight Commission on Intercollegiate Athletics (KCIA) sponsored a random survey of 502 U.S. adults aged 18 and older to ascertain their beliefs regarding college athletics (KCIA, 2006). The amount coaches were paid was among the concerns expressed by respondents, but such concern did not dull their overall enthusiasm and support for college sports. Beyond the entertainment value of college sports, a reason that the perceived high degree of commercialization of college athletics did not seem to diminish the opinion of college sports among most U.S. adults was the persistence of certain key myths justifying big-time intercollegiate athletics. For

example, 78% of the KCIA poll respondents believed that big-time athletics were profitable. In addition, 84% believed that successful teams generate more alumni donations, 55% believed that athletic success translates into a higher quality student applicant pool, and 57% of the sports fans and 42% of the respondents in general believed that spending more on salaries and operating expenses allowed a team to win more.

The beliefs concerning profitability, donations, and applicants seem to be myths, because existing research provides little or no consistent support for them or refutes them (Fisher, 2009; Litan et al., 2003; Michel, Sopp, & Stafford, 2007; Nixon, 2005; Orszag & Israel, 2009; Orszag & Orszag 2005; Sander, 2010; Suggs, 2009). We have to remember that although many programs compete, there is one national champion and one conference champion. There are only a handful of universities in the Bowl Championship Series of football and Final Four tournament of men's basketball, respectively. Thus, when expectations escalate with increased spending, these expectations necessarily become more unrealistic in all but a relatively few cases. Although the belief in the link between spending and victories logically implodes as expenses increase and the standard for success increases (e.g., from being conference champion to being national champion), it warrants closer scrutiny. Football and men's basketball are the most commercialized and visible college sports, which is why success in these sports is valued so highly by teams, institutions, and fans. In the remainder of the article, we will consider evidence about how giving coaches in football and men's basketball very generous compensation is related to athletic success and status.

Data Tables, Sources, and Measures

Although some (e.g., Bowen & Buck, 2004; Curris, 2009; Deresiewicz, 2011; Stripling & Fuller, 2011) have criticized the escalating pay of college and university presidents, their pay generally pales in comparison to the compensation packages of big-time college football and men's basketball coaches. According to the annual American Association of University Professors (AAUP) compensation survey, the average compensation of presidents of Division I-A Football Bowl Subdivision institutions in 2005-2006 was US$416,719 and the average salary of full professors at these schools was US$101,774. The average compensation of the head football coach at these institutions was US$918,238 (Thornton, 2007). Tables 1 and 2 show the compensation paid to the highest paid college football and men's basketball coaches in 2010-2011. Although we refer to the 25 "best paid" head football and men's basketball coaches in 2011, these characterizations are not exactly correct. The *USA Today* football compensation database did not include information about the compensation of coaches at some prominent "football schools," including University of Notre Dame, Penn State University, University of Southern California (USC), and Stanford University, whose coaches might have been included in the Top 25 in pay. One university that should almost certainly be included in Table 1 is the USC, whose

Table 1. Top-Paid College Head Football (FB) Coaches (2010-2011) and Athletic Status Indicators

Coach salary rank				Top 25 FB					
2010[a]	2006	Institution	2010 Salary[b] (million US$)	2010-2011 *USA Today* rank	2009-2010 *USA Today* rank	2007-2008 *USA Today* rank	2006-2007 *USA Today* rank	2005-2006 *USA Today* rank	2003-2004 *USA Today* rank
1	11	Alabama	5.1660	11	1	NR	NR	8	NR
2	4	Texas	5.1000	NR	2	10	13	1	11
3	1	Oklahoma	4.2750	6	NR	8	11	22	3
4	19	Florida	4.0100	NR	3	16	1	16	25
5	2	Iowa	3.7750	NR	7	NR	NR	NR	8
6	23	LSU	3.7510	8	17	1	3	5	1
7	7	Ohio State	3.5120	5	5	4	2	4	4
8	NR	Wake Forest	2.9390	NR	NR	NR	17	NR	NR
9	13	Georgia	2.8110	NR	NR	3	NR	10	6
10	NR	Arkansas	2.7000	12	NR	NR	16	NR	NR
11	NR	Missouri	2.5500	18	NR	5	NR	NR	NR
12	22	Michigan	2.5150	NR	NR	19	9	NR	7
13	NR	Mississippi	2.5000	NR	21	NR	NR	NR	14
14	NR	Oregon	2.4000	3	11	NR	NR	12	NR
15 (tie)	20	California	2.3000	NR	NR	NR	NR	25	NR
15 (tie)	NR	Georgia Tech	2.3000	NR	13	NR	NR	NR	NR
17	NR	SMU	2.1420	NR	NR	NR	NR	NR	NR
18	6	Tennessee	2.1180	NR	NR	12	23	NR	16
19 (tie)	5	Auburn	2.1000	1	NR	14	8	14	NR
19 (tie)	21	Kansas	2.1000	NR	NR	7	NR	NR	NR
19 (tie)	16	Nebraska	2.1000	19	14	NR	NR	24	18
22	9	Virginia Tech	2.0430	15	10	9	18	7	NR
23	15	Maryland	2.0360	24	NR	NR	NR	NR	20
24	25	South Carolina	2.0000	22	NR	NR	NR	NR	NR
25	NR	Oklahoma State	1.9250	10	25	NR	NR	NR	NR

Note: NR = not ranked. The *USA Today* coaches' compensation survey did not include information about Brigham Young, Northwestern, Southern California, Notre Dame, Stanford, Tulane, or Vanderbilt. *USA Today* top 25 poll rankings accessed at following link: http://www.collegefootballpoll.com/polls_1936_present_h.html.

[a]Source: *USA Today* report released 12/26/2010: http://www.usatoday.com/sports/college/football/2010-coaches-contracts-database.htm.

[b]Includes only university-based salary, not including outside compensation.

Table 2. Top-Paid Men's College Basketball (BB) Head Coaches (2010-2011) and Athletic Status Indicators

Coach salary rank				Top 25 BB					
2011[a]	2006	Institution	2010-2011 Salary[c] (million US$)	2010-2011 *USA Today*/ESPN rank	2009-2010 *USA Today*/ESPN rank	2007-2008 *USA Today*/ESPN rank	2006-2007 *USA Today*/ESPN rank	2005-2006 *USA Today*/ESPN rank	2003-2004 *USA Today*/ESPN rank
1	NR	Louisville[b]	6.1000	22	NR	6	15	NR	NR
2	14	Duke	4.1960	7	1	16	NR	7	2
3	1	Kentucky	3.8000	3	5	NR	NR	NR	8
4	10	Florida	3.5750	10	NR	NR	1	1	NR
5	6	Kansas	3.3760	4	6	1	5	22	9
6	4	Michigan State	3.0900	NR	4	13	NR	NR	NR
7	2	Ohio State	2.5420	5	11	NR	2	13	NR
8	7	Connecticut	2.3000	1	NR	NR	NR	4	1
9	3	Texas	2.2000	16	NR	5	16	9	10
10	12	UCLA	2.0100	NR	NR	4	3	2	NR
11	9	Arizona	1.9500	9	NR	NR	NR	NR	NR
12	NR	Georgetown	1.8300	NR	NR	12	4	16	NR
13	NR	Villanova	1.8030	NR	15	24	NR	5	NR
14	NR	West Virginia	1.8000	NR	3	NR	NR	15	NR
15	NR	Vanderbilt	1.7110	NR	NR	25	19	NR	25
16 (tie)	20	Wisconsin	1.7000	15	24	10	11	NR	16
16 (tie)	NR	Michigan	1.7000	NR	NR	NR	NR	NR	NR
18	8	North Carolina	1.6550	8	NR	3	5	14	22
19	15	Texas A&M	1.6000	NR	25	NR	9	NR	NR
20 (tie)	24	Illinois	1.5000	NR	NR	NR	NR	17	11
20 (tie)	NR	Florida State	1.5000	19	NR	NR	NR	NR	NR
20 (tie)	16	Tennessee	1.5000	NR	9	7	18	20	NR
23	NR	Pittsburgh	1.3900	12	20	18	10	18	7
24	NR	Kansas State	1.3680	24	7	NR	NR	NR	NR
25	18	Syracuse	1.3520	18	8	NR	NR	NR	19

Note: NR = not ranked. The *USA Today* coaches' compensation survey included coaches at the 68 institutions in the 2011 NCAA Men's Basketball Tournament. *USA Today*/*ESPN* Top 25 poll rankings accessed at following links: http://espn.go.com/mens-college-basketball/rankings (for all years except 2006-2007), http://www.usatoday.com/sports/college/mensbasketball/2007-04-03-final-usatmen_N.htm (for 2006-2007).

[a]Source: *USA Today* report updated 3/30/2011: http://www.usatoday.com/sports/college/mensbasketball/2011-coaches-salary-database.htm.

[b]The Louisville coach's 2010-2011 salary included a one-time, US$3.6 million bonus paid in June, 2010.

[c]Includes only university-based salary, not including outside compensation.

coach (Lane Kiffin) is rumored to have signed a contract in 2010 worth approximately US$4 million per year (Hinton, 2010). However, without precise confirmation of the amount of this salary, we could not include USC in Table 1. Meanwhile, the *USA Today* men's basketball compensation database focused only on the 65 institutions that played in the 2011 NCAA men's basketball tournament. Despite the possible absence of institutions that might have qualified for these Top 25 coaches' compensation lists, those included can be viewed as representative of colleges and universities at the top tier of these big-time college sports in the compensation of their coaches and in their athletic ambitions and aspirations. It should be added that the compensation figures underestimate total compensation in many cases because they do not include benefits, bonuses, and incentives that many coaches receive.

Tables 1 and 2 also indicate how the status of being among the Top 25 institutions in coaches' compensation in football and men's basketball is related to indicators of athletic success. In the sections presenting these data, we mainly refer to teams or programs rather than to individual coaches for two reasons. First, we are primarily interested in programs and institutions that make investments in star coaches, and second, because we were more interested in structural data, we did not collect information about factors such as the tenure of individual coaches at their institution. As coaches voluntarily move, retire, or are fired each year, we could not assume that the coaches in the 2010-2011 Top 25 compensation lists were at their institutions in previous years. These tables rely on data from *USA Today* end-of-season Top 25 football polls and *USA Today*/*ESPN* end-of-season Top 25 basketball polls for the 2003-2004, 2005-2006, 2006-2007, 2007-2008, 2009-2010, and 2010-2011 seasons.

Table 3 presents data about program mobility for the teams with highly paid coaches. *Program mobility* refers to whether a program moved up into the Top 25 rankings in its sport from one year to another (upward mobility), whether it moved out of the Top 25 (downward mobility), or whether its position in or out of the Top 25 remained the same from year to year (no change). Program mobility was viewed from short- and long-term perspectives. The short-term perspective looks at program mobility over two different 1-year periods (2005-2006 to 2006-2007 and 2009-2010 to 2010-2011). The long-term perspective examines program mobility over two different 4-year periods, from 2003-2004 to 2006-2007 and from 2007-2008 to 2010-2011. A four-year period was selected as the long-term standard, because it represented a period of time during which substantial changes in team composition could happen. With increasing numbers of college football and men's basketball players leaving college early to turn professional, a 4-year period allows for a significant turnover in a team's players. In addition to showing data about short- and long-term mobility for football and basketball teams with highly compensated head coaches, Table 3 indicates how many programs in each sport were part of the "established elite" in their sport, meaning that they were in the Top 25 all of the seasons studied. Table 3 also shows how many teams were "elite seekers," not in the Top 25 in any of the seasons. The findings from Tables 1, 2, and 3 are in the next section.

Table 3. Top-Paid Head Coaches in College Football and Men's Basketball and Program Status Mobility

		Coach's athletic program			
		(1)		(2)	
		Data 2003-2004 through 2006-2007		Data 2007-2008 through 2010-2011	
		Football	Basketball	Football	Basketball
Mobility	Short-term upward mobility	16% (4)	16% (4)	24% (6)	28% (7)
	No short-term change	64% (16)	68% (17)	56% (14)	52% (13)
	Short-term downward mobility	20% (5)	20% (5)	20% (5)	20% (5)
	Long-term upward mobility	16% (4)	28% (7)	28% (7)	32% (8)
	No long-term change	64% (16)	52% (13)	48% (12)	44% (11)
	Long-term downward mobility	20% (5)	20% (5)	24% (6)	24% (6)
Long-term stability	Established elite in sport (in)	20% (5)	16% (4)	12% (3)	16% (4)
	Elite seeker in sport (out)	24% (6)	20% (5)	12% (3)	8% (2)

Note: Short-term upward mobility = Moving into Top 25 team rankings between (a) 2005-2006 and 2006-2007 and (b) 2009-2010 and 2010-2011; Long-term upward mobility = Moving into Top 25 team rankings between (a) 2003-2004 and 2006-2007 and (b) 2007-2008 and 2010-2011; No short-term change = Same Status in or out of Top 25 team rankings in (a) 2005-2006 and 2006-2007 and (b) 2009-2010 and 2010-2011; No long-term change = Same Status in or out of Top 25 team rankings in (a) 2003-2004 and 2006-2007 and (b) 2007-2008 and 2010-2011; Short-term downward mobility = Moving out of Top 25 team rankings between (a) 2005-2006 and 2006-2007 and (b) 2009-2010 and 2010-2011; Long-term downward mobility = Moving out of Top 25 team rankings between (a) 2003-2004 and 2006-2007 and (b) 2007-2008 and 2010-2011; Long-term stability = Same status in or out of Top 25 in (a) 2003-2004, 2005-2006, and 2006-2007 and (b) 2007-2008, 2009-2010, and 2010-2011.

Findings

Coaches' Compensation

Football: Table 1 shows that the 25 best paid football coaches in the 2010 USA Today compensation survey earned between US$1.925 million (Oklahoma State) and US$5.17 million (Alabama). The salary data in Table 1 is only university-based salary, not including external, nonuniversity payments received. This is consistent with the focus of this article on the salaries paid by universities to their coaches and whether those salaries result in improved team performance. All of the institutions except for Wake Forest were public universities. Moreover, 24 of the 25 institutions were affiliated with the one of the six "equity conferences" that constitute the top level of college athletics (Wetzel, Peter, & Passan, 2010, p. 19). Elsewhere, Nixon (2008) has termed

these the "Elite 6" conferences (p. 258). In rank order by total revenue, these six conferences are the Southeastern Conference (SEC), Big Ten, Atlantic Coast Conference (ACC), Big 12, Pacific-10 (now Pacific-12), and the Big East. However, the Big East had no schools listed in Table 1. The lone representative of a non-Elite 6 conference was Southern Methodist University (SMU), from Conference USA. SMU has a unique history, as it attempts to return to the football prominence that it enjoyed before its football program received the so-called "death penalty" in the late 1980s as a result of NCAA rules violations (Hofeditz, 2009). Based on the relatively high pay of the SMU football coach, the university is clearly counting on their investment in their coach paying off in on-field success.

Basketball: Table 2 shows that the 25 best paid men's basketball coaches earned between US$1.35 million (Syracuse) and US$6.1 million (Louisville) in 2011. Except for six schools (Louisville, Duke, Georgetown, Villanova, Vanderbilt, and Syracuse), all the institutions employing these coaches were public universities. All 25 universities in Table 2 were affiliated with the Elite 6 conferences.

Athletic Success Indicators

Football: We see in Table 1 that among the football teams that in 2010 had the 25 best paid coaches, 52% (13) were in the Top 25 football rankings in 2010-2011, 48% (12) were in the Top 25 the previous year, and 48% (12) were also in the Top 25 in 2007-2008. Looking further back in time reveals that 44% (11) were also in the Top 25 in 2006-2007, 48% (12) were in the Top 25 in 2005-2006, and 48% (12) were in the Top 25 in 2003-2004.

Basketball: According to Table 2, among the men's basketball teams that had the 25 best paid coaches in the 2011 NCAA tournament, 60% (15) were in the Top 25 men's basketball rankings in 2010-2011, 52% (13) were in the Top 25 the previous year, and 52% (13) were in the Top 25 in 2007-2008. In 2006-2007, 52% (13) were in the Top 25, and in 2005-2006, 56% (14) were in the Top 25. In 2003-2004, 44% (11) were in the Top 25.

Program Mobility, 2003-2004 through 2006-2007

Football: Table 3 shows that 16% (4) of the football teams with the most compensated coaches experienced short-term upward mobility into the Top 25 between 2005-2006 and 2006-2007, 64% (16) of the football teams had no short-term change in their position, and 20% (5) experienced short-term downward mobility out of the Top 25. In terms of long-term mobility between 2003-2004 and 2006-2007, 16% (4) of the teams on the football compensation list experienced upward mobility into the Top 25 football rankings, 64% (16) had no change in position, and 20% (5) experienced downward mobility out of the Top 25. Furthermore, among the teams on the football compensation list, 20% (5) were in the Top 25 football rankings in the three seasons for which data were collected—that is, 2003-2004, 2005-2006, and 2006-2007. These

5 teams could be characterized as members of the "established college football elite." Another 24% (6) of the teams on the football compensation list could be characterized as the "elite seekers," because they were not in the Top 25 football rankings in any of the three seasons studied. We can assume either that the elite seekers were highly motivated to return to past glory, such as SMU, or that they very much wanted to achieve a breakthrough into the elite for the first time by hiring a prominent coach with a big compensation package.

Basketball: We can see in Table 3 that 16% (4) of the men's basketball teams with the most compensated coaches experienced short-term upward mobility into the Top 25 between 2005-2006 and 2006-2007, 68% (17) of the men's basketball teams had no short-term change in their position, and 20% (5) experienced short-term downward mobility out of the Top 25. In terms of long-term mobility between 2003-2004 and 2006-2007, 28% (7) of the teams on the men's basketball compensation list experienced upward mobility into the Top 25 men's basketball rankings, 52% (13) had no change in position, and 20% (5) experienced downward mobility out of the Top 25. Furthermore, among the teams on the men's basketball compensation list, 12% (3) were in the established men's college basketball elite, with Top 25 rankings in all three seasons for which data were collected. Another 20% (5) of the teams on the men's basketball compensation list were elite seekers, because they were not in the Top 25 rankings in any of the three seasons studied.

Program Mobility, 2007-2008 through 2010-2011

Football: Table 3 shows that 24% (6) of the football teams with the most compensated coaches experienced short-term upward mobility into the Top 25 between 2009-2010 and 2010-2011, 56% (14) of the football teams had no short-term change in their position, and 20% (5) experienced short-term downward mobility out of the Top 25. In terms of long-term mobility between 2007-2008 and 2010-2011, 28% (7) of the teams on the football compensation list experienced upward mobility into the Top 25 football rankings, 48% (12) had no change in position, and 24% (6) experienced downward mobility out of the Top 25. Furthermore, among the teams on the football compensation list, 12% (3) were in the Top 25 football rankings in the three seasons for which data were collected—that is, 2007-2008, 2009-2010, and 2010-2011. These 3 teams could be characterized as members of the "established college football elite." Another 12% (3) of the teams on the football compensation list could be characterized as the "elite seekers," because they were not in the Top 25 football rankings in any of the three seasons studied.

Basketball: We can see in Table 3 that 28% (7) of the men's basketball teams with the most compensated coaches experienced short-term upward mobility into the Top 25 between 2009-2010 and 2010-2011, 52% (13) of the men's basketball teams had no short-term change in their position, and 20% (5) experienced short-term downward mobility out of the Top 25. In terms of long-term mobility between 2007-2008 and 2010-2011, 32% (8) of the teams on the men's basketball compensation list

experienced upward mobility into the Top 25 men's basketball rankings, 44% (11) had no change in position, and 24% (6) experienced downward mobility out of the Top 25. Furthermore, among the teams on the men's basketball compensation list, 16% (4) were in the established men's college basketball elite, with Top 25 rankings in all three seasons for which data were collected. Another 8% (2) of the teams on the men's basketball compensation list were elite seekers, because they were not in the Top 25 rankings in any of the three seasons studied.

"Extra-Long-Term" Program Mobility, 2003-2004 through 2010-2011

Football: Besides the mobility statistics reported above, it is also possible to examine "extra-long-term" program mobility between the two time periods (2003-2004 through 2006-2007 and 2007-2008 through 2010-2011). For example, as stated above, there were six football programs that qualified as "elite seekers" in Period 1 (2003-2004 through 2006-2007). Not one of those programs became an established elite program in Period 2 (2007-2008 through 2010-2011). Moreover, of the 5 established elite programs in Period 1, only 2 remained elite through Period 2.

Also, it is possible to look at mobility of programs from the 2003-2004 season through the 2010-2011 season. During this 8-year time period, 32% (8) of the programs on the football compensation list experienced upward mobility into the Top 25 football rankings, 40% (10) had no change in position, and 28% (7) experienced downward mobility out of the Top 25.

Basketball: There were 5 basketball programs that qualified as "elite seekers" in Period 1 (2003-2004 through 2006-2007). None of those programs became an established elite team in Period 2 (2007-2008 through 2010-2011). Of the 4 established elite programs in Period 1, 2 remained elite through Period 2. As for the mobility of programs between the 2003-2004 and 2010-2011 seasons, 24% (6) of the teams on the basketball compensation list experienced upward mobility into the Top 25 rankings, 68% (17) had no change in position, and 8% (2) experienced downward mobility out of the Top 25.

Conclusion

Our simple methodology did not permit us to draw precise conclusions about causal connections between coaches' compensation and athletic status. However, the data allow us to make some broad generalizations about the implications of paying top dollar for big-time coaches. First, it is obvious that institutional officials, trustees, athletics boosters, and donors at many of the top-rated institutions in the United States place a very high value on success in big-time athletics. Although this fact is widely known, what is a little surprising is the extent to which public institutions dominate the big-time college sports world and the star wars arms race that has become a major feature of it. It is now a historical curiosity that the early years of college

athletics, into the 20th century, were dominated by elite private institutions, such as Harvard, Yale, and the University of Chicago. The top ranks of the *U.S. News & World Report* surveys of national universities are consistently disproportionately occupied by private universities, at least partially because even the most prominent public universities in the United States today cannot compete with top private universities in financial resources. Yet many prominent public universities, and a number that are less prominent, have been investing very large (and growing) sums of money in coaches as part of a star wars arms race. This recent pattern of athletic spending is particularly noteworthy because many public universities were dealing with institutional budget crunches resulting from persisting national and state economic and financial problems.

It is not evident from the data that we have collected that the expected benefits of this arms race are being achieved. In the highly competitive worlds of big-time college football and men's basketball, even high-priced coaches cannot assure that their recruiting and coaching skills will lead to success year after year. We have demonstrated, for example, that luring big-name or recently successful coaches with huge compensation packages does not assure top ranking of a big-time sports program in the short term. If we look at the six seasons covered by this study, we find that in football, the percentage of programs not in the Top 25 in a given year ranged from 48% to 56%, whereas in basketball, the percentage of programs not in the Top 25 in a given year ranged from 40% to 56%. Furthermore, the long-term mobility data indicate that having a highly compensated coach does not reflect a pattern of sustained big-time success at the highest levels of college football or men's basketball. Only 20% of the football programs and 12% of men's basketball programs with top-paid coaches were members of the established elite in their sport during the first time period covered by this research. During the second time period, only 12% of the football programs and 16% of men's basketball programs with top-paid coaches were members of the established elite. In fact, only two football programs (LSU and Ohio State) and two basketball programs (Kansas and Pittsburgh) were ranked in the Top 25 at the end of all six seasons covered here.

Looking at the data in Table 3, as well as at the "extra-long-term" mobility data reported above, it appears that for the most part, programs with highly paid coaches were just as likely to experience no short, long, or extra-long-term change in Top 25 status as they were to experience any mobility (either upward or downward). For example, between 2007-2008 and 2010-2011, 48% (12) of the football programs in Table 3 experienced no long-term change, and 52% (13) of the football programs experienced either upward (7) or downward (6) mobility. This pattern is repeated throughout Table 3, with little variation. The likelihood of upward mobility was roughly the same as the likelihood of downward mobility, except in the case of extra-long-term mobility in men's basketball. Recall that, between 2003-2004 and 2010-2011, six of the basketball programs studied here moved into the Top 25, and two dropped out. Similarly, as Table 3 illustrates, of the three established elite men's basketball teams in Period 1 (2003-2004 through 2006-2007), two remained elite in all of

Period 2 (2007-2008 through 2010-2011). In the case of men's basketball, there seems to be some evidence that a high salary for the coach can fight off the decline of a program. That is a very different claim, however, than the argument that a high salary for the coach will lift a program to the height of success. This latter argument is the focus of this study, and it is not consistently supported here.

Thus, institutions that want a quick or sustained pay-off in success on the field and prestige from a highly ranked football or men's basketball program from their substantial investment in a star coach are playing a risky game. The *U.S. News &World Report* rankings for colleges and universities may not change very dramatically from year to year, unless they change the ranking criteria. However, in intercollegiate athletics, staying in the football or men's basketball elite from year to year appears much less certain, perhaps in part because of the star wars arms race and the high expectations for success associated with it. Coaches who have an outstanding season are lured away by a lot of money, despite their contractual obligation to their current institution, and coaches who fail to meet expectations are replaced by "stars" who receive lucrative new contracts to achieve the success the departed coach did not achieve. In some cases, universities are simultaneously paying the salaries of current head coaches and head coaches who have been fired, adding to the financial burden.

An important fact about the star wars arms race is that it is biased and stratified. Although it is difficult to sustain membership in the elite, or Top 25, of football and men's basketball from year to year, those institutions in the equity conferences have a significant advantage in the status game because they are assured more athletic revenue from their conferences every year. Thus, participating in the star wars arms race is relatively more costly for those "lesser" and "midmajor" programs located outside the equity conferences. There is an interesting irony, though, about those most heavily invested in the star wars arms race. This heavy investment may be unnecessary if the purpose is to increase name recognition or gain a branding boost from big-time success on the athletic field. Many of the institutions in Tables 1 and 2 already are among the most recognized institutions in their geographical area or the nation because they are flagships or major research universities in public university systems. Their recognition or stature within the geographical boundaries that would seem to matter the most is already assured by their status in public higher education in their state. They are likely to have more qualified applicants than they can accept, regardless of the success of their sports teams. It is not clear how valuable the currency of athletic success is when presidents are arguing for more funds for students, faculty, research, or academic equipment and facilities. In fact, some legislators and prospective donors may be skeptical about arguments for financial needs when millions are spent on coaches.

Within athletic departments, programs are stratified into those with high, low, and no revenue potential. Some institutions, such as Rutgers, James Madison, and Ohio University, have recently cut a number of "Olympic" (nonrevenue) sports programs for men, ostensibly for budgetary reasons or to increase compliance with Title IX. However, the primary reason may be to support the growing budgets of the "major" sports such as football (Brake, 2010; Infante, 2007b; Lopiano, 2005; Sander, 2011;

Tigay, 2011; Zimbalist, 2006, pp. 278-280). In fact, one of the major costs of the star wars arms race may be support for non- or limited-revenue women's and men's sports (Nixon, 2005).

We are now beginning to see a star wars arms race in women's college basketball, with top coaches earning more than US$1 million per year, and after successful seasons, top coaches of women's teams are receiving big compensation boosts from their current employer or bigger offers from competing schools (Patrick, 2007). Eichelberger (2011) noted that such contracts are especially costly to institutions, because these women's programs typically do not generate enough external revenue to pay for themselves. As staffing and recruiting costs of so-called minor or non-revenue sports escalate, the financial pressures of the star wars arms race in athletics will intensify and big-time programs are likely to try to squeeze more resources for themselves, leaving relatively less for other programs. Although it is not necessarily a zero-sum game if revenues continue to rise, there are likely to be bigger battles over who is entitled to the biggest shares of athletic revenues.

Sports economist Andrew Zimbalist (2006), who has frequently criticized the NCAA and commercialization in college athletics for straying from the academic mission of higher education, argued that paying coaches millions of dollars did not make sense (pp. 281-282). He proposed that paying the head coach of a college football or men's basketball team more than the president of his institution conveys a message of distorted priorities. He also suggested that giving coaches extravagant and escalating compensation packages was not an economically efficient allocation of institutional or athletic resources. He believed that if the NCAA passed a rule that coaches could not earn more than presidents, big-time college sports would not see a mass exit of coaches to other occupations. By this rule, college athletics or their institutions would have more money to spend on other things or at least would convey a message of more reasonable priorities. This rule would require a Congressional antitrust exemption, but Zimbalist thought that Congressional cooperation was likely if the NCAA asked for this exemption to allow the salary-restriction rule. Of course, he did not think the NCAA would pass this kind of rule.

NCAA Presidents (e.g., Brand, 2006) have recognized that contemporary higher education and big-time college athletics required commercial activities for their survival. The challenge is in deciding where to draw the line between enough and too much commercialism and financial investment. In recent years, the arms race in spending in college sports has resulted in annual growth rates in athletic spending per athlete that were twice as much as the annual growth rates in academic spending per student (Clotfelter, 2011, pp. 122-123). This situation caused concern on campus, in athletics, and in the NCAA that athletic budgets would be increasingly stretched, requiring increasing subsidies from general university resources, if the arms race continued at its current pace. Although athletic budgets are generally 3% to 5% of university budgets, increasing allocations for athletics could intensify criticism and resistance from faculty, governing boards, and students wanting to see more invested in academics.

The challenge in trying to reverse direction in athletic investment is that once an institution develops big-time athletic ambitions and makes an institutional and financial commitment to support these ambitions, it may be caught in a web it cannot easily escape. Clotfelter (2011, p. 197) has provided compelling evidence showing that once universities adopt big-time athletic programs, they rarely drop out of the big-time. Thus, despite the arguments against college sports, for example, because it is so highly commercialized as an entertainment business and is so costly (e.g., Bok, 2003; Duderstadt, 2000, 2003), the reality is that big-time college sports are not likely to go away. The issue, though, which even concerns the power structure of college sports on campus and in the NCAA, is the escalating cost. Part of that issue is the increasing salaries of coaches who are benefiting from the star wars arms race, even during times when many in the U.S. labor force, including other university employees, were facing furloughs, salary cuts, or layoffs. Institutions in the star wars arms race—and the related arms race in athletic facilities—are contending with increasing financial and competitive pressures. However, it is the nature of arms races that no one wants to take the first step in curbing athletic spending for fear of being left behind.

Once an institution's leadership has bought into the rationale of the need for big-time athletic success as a means to institutional enhancement, it may have fallen into an "*athletic trap*." That is, the "institutional enhancement rationale" that leads institutions into the financial arms race and ever-increasing spending on big-time athletics and star coaches may result in ceding institutional control over athletics to these big-name coaches, their athletic directors, and powerful athletic boosters (including alumni, trustees, and wealthy athletic donors), who believe most strongly in the need for increased spending on their big-time athletic programs. This begs the question, to what extent is increased investment in athletics undertaken to achieve the goal of institutional enhancement, as opposed to the goal of the enhancement and consolidation of the power of athletic departments within the institution? At a time of budget cuts, coupled with rising student fees to support athletics (Berkowitz, Upton, McCarthy, & Gillum, 2010) at many universities, answering this question becomes increasingly important.

Some (Drape & Thomas, 2010; Wetzel et al., 2010) have begun to take note of the growing power of athletic directors within universities. With this changing power alignment in higher education, it is unlikely that the kind of self-restrictive rules proposed by Zimbalist will be widely embraced. In the business world of big-time athletics, cooperation to limit salaries could result in anti-trust action, even as legislators continue to call for an end to the star wars arms race. Aside from possible scrutiny by legislators, public pressure does not seem likely as long as there is a pattern of widespread public support for intercollegiate athletics, despite perceptions of some problems. Public concerns about excessive commercialism and coaches' compensation do not seem to have much bearing on whether the public will continue to follow college sports. As in the case of the extravagant salaries in professional sports, the public may not like this aspect of the big-time sports world. However, it does not seem likely to diminish their college sports passion in the foreseeable future, even in the context of revelations about multiple scandals in big-time programs, as in 2011.

Meaningful reform will have to involve the college presidents, boards, NCAA officials, and legislators, perhaps prodded by influential reform advocates such as the KCIA. A summit of college presidents of big-time athletic programs was convened by the NCAA in 2011 in response to the growing concern within the college sports establishment about the bad publicity generated by cases of cheating in major programs and concerns about academic integrity in college sports, among other things (Vedder, 2011). Of course, in the background were ongoing concerns about intensifying financial pressures, especially in a lingering bad economy. Even with these apparently genuine concerns, it is unlikely that efforts will be made to transform the fundamental structure of big-time college sports as a highly commercialized entertainment enterprise. Those institutions that have big-time programs are unlikely to want to de-emphasize them, and those who support and regulate college sports in the NCAA and the athletic conferences are unlikely to try to undermine their own power or position. It is important to note that the nuclear arms race, from which the athletic arms race takes its name, eventually ended when the United States and U.S.S.R. realized that the pattern of investing increasing sums of money in weapons was unsustainable. However, these nations were left with commitments to very large defense budgets. This could be the legacy of the arms race in college athletics, even if it ended today.

There seems to be a growing recognition that the arms race is unsustainable in college sports, especially for those not in the elite. Controlling costs could be a realistic goal if institutions and governing bodies are able to do this without engendering antitrust issues and strong opposition from powerful athletic boosters. As big-time college sports grapple with this and other financial issues, such as providing more compensation for student athletes, they are likely to find that their star wars are hardly an entertaining fantasy, but instead a recurring and troubling reality as long as the arms race persists. We hope that examination of the kinds of data and arguments presented in this article will help sharpen the debate at least about this kind of athletic spending and point decision makers in fruitful directions in addressing this cost issue. How they address this issue is likely to reveal how they see the balance among athletic, academic, and other priorities at the major universities playing at the big-time level and those others aspiring to this level of competition.

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