Quantifying The Chasm: Exploring The Impact Of The BCS On Total Football Revenues For Division One Football Programs From 2002-2012

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ABSTRACT

The Bowl Championship Series served as a collection of bowl games that were designed to crown the national champion in Division One football. The BCS created two classifications of institutions in Division football, those that were granted automatic access (AQ) to the post-season games, and those that were not (non-AQ). The BCS also generated billions of dollars for participating schools. This study examines the financial impact of the BCS on total revenue reported by member institutions, from 2002 to 2012. It further seeks to quantify the impact of inclusion in a BCS AQ conference on the distribution of the more than $24 billion in revenue. This study concludes that membership in a BCS AQ conference accounts for nearly 40% of the variance in total football revenue, and can provide these AQ schools with more than an $18 million dollar advantage over their non-AQ peers. This study explores both the reasons for and the impact of these differences on Division One football institutions.

Keywords: Bowl Championship Series; BCS; Division One Football Revenue; Educational Institution Funding

DISCUSSION

*T*he 2013 college football season marked the end of the lucrative, but often controversial, Bowl Championship Series (BCS), the post-season conglomerate of bowl games that was largely used to crown a national champion. The BCS was comprised of the BCS National Championship Game, the Rose, Sugar, Fiesta, and Orange Bowls. The BCS, largely by design, created a windfall of revenue for institutions and administrators, with payouts that grew exponentially over the years. As a cadre of the top bowl games, these organizations were able to package and collectively negotiate television contracts exceeding any and all financial expectations that could be placed on the sport.

The lucrative nature of the BCS has never been disputed. For example, in the 2011 season, the BCS paid out a then record $174.07 million to Division One institutions (Sporting News, 2011); the 2010 season saw a payout of $142.5 million (Smith, 2010). In 2013, the 35 collective bowl games paid out a total of $300.8 million to each of the teams that participated in one of the games (Solomon, 2013). The BCS, however, also created a distinction amongst the Division One football conferences. At the end of the 2013 football season, the Southeastern Conference (SEC), the Big Ten (B10), the Big Twelve (B12), the Atlantic Coast Conference (ACC), the Pacific-Twelve (P12), and the newly formed American Athletic Conference (the former Big East (BEAST)) were all classified as AQ conferences. This left the remaining conferences: the Sun-Belt (SUN), Conference USA (CUSA), the Mid-American Conference (MAC), the Mountain West (MWC), and the Western-Athletic (WAC), as the non-AQ conferences. Some argue that these distinctions also created a giant chasm in the amount of revenue generated by those institutions that belong to an automatic-qualifier conference (AQ) compared to those that did not (Fulks, 2010; Caro & Benton, 2012).

The BCS is not the only revenue stream for institutions. Indeed, there exist a multitude of revenue generation avenues for institutions that participate in Division I football. Attendance at home games (Fulks, 2002; Price & Sen, 2003), merchandise sales, and alumni giving (Baade & Sundberg, 1996; McCormick & Tinsley, 1990), are, arguably, the most recognizable. In addition, schools have recently instituted new seat licenses for the sale of season tickets. Following a model similar to the NFL, season ticket holders are asked to pay a "donation" for the right to reserve their seat. At Louisiana State University, this donation can range from zero dollars for upper level tickets, to $1,025 for prime tickets. Coupled with the price of the season tickets, this can make a single ticket cost anywhere from $425 to $1,450 for the season (LSUSports, 2014). LSU is not alone in this practice. The University of Michigan, one of the last top programs to adopt the system, instituted a similar program. Their "Personal Seat Donation" costs season ticket holders anywhere from $75 to $4,000; they also recently adopted a dynamic ticket pricing system, where the quality of opponent largely determines the price of the event (Mgoblue, 2014). At the University of Alabama, the contribution can range from $50 to a staggering $2,200 per ticket (RollTide, 2014). This seat licensure practice has become popular across many institutions, to the end that the University of Southern California sent a survey out to their prospective season ticket holders inquiring about the possibility of adding it to help fund future renovations to the L.A. Coliseum where the Trojans play (Bromberg, 2014). Collegiate institutions undoubtedly see the potential additional revenue that such licensures can bring, which is estimated to be up to $100 million dollars for the NFL's Minnesota Vikings (Olson, 2014). This practice, however, has increased the cost of attendance for fans and has not been without its negative implications, which will be discussed below.

In addition to season tickets and seat licensing, many universities bank on the selling of their brand through independent licensing and merchandise royalties. Collegiate Licensing Company (CLC) represents a majority of the top institutions in the branding and sale of their collegiate merchandise. In fact, most major Division One institutions, with the exception of Ohio State, Michigan State, University of Southern California, and Oregon are represented by CLC (Rovell, 2013). A multitude of variables can influence the sale of collegiate merchandise. Principle among those, however, is the impact that comes from winning and the extra exposure to the casual fan. The CLC reports that the University of Louisville gained in sales largely from the Cardinal's NCAA Basketball National Championship in 2013. Further, they recognize Texas A&M for jumping seven spots in their latest numbers, mostly from A&M's move from the Big 12 to the SEC, and from having a Heisman Trophy winner in Johnny Manziel. To this end, CLC estimates that merchandise sales across all of their clients were nearly $4.62 billion (CLC, 2013). CLC reports that the top earning universities in merchandise sales and royalties were the University of Texas, the University of Alabama, Notre Dame, Michigan, and the University of Kentucky. Further correlations between winning, exposure, and sales can be drawn from the 2010 figures. In that 2010 year, Texas still finished first, with estimated gross royalties of $10.5 million, but Alabama jumped from number five to second on that year's list. Even Notre Dame, arguably the strongest Independent brand was buoyed by undefeated season and appearance in the 2013 BCS National Championship Game. Their opponent that year, Alabama, finished second in merchandise royalties. The jump to number three for Notre Dame, represented a nine spot jump from twelve in 2010 (O'Toole, 2010).

Thus far, season tickets, seat licenses, and merchandising have all been examined. There are also correlations back to the amount of donor money that runs through institutions following successful seasons (Brooker & Klastorin, 1981; Daughtrey & Stotlar, 2000). These sources of revenue, however, do not begin to paint a complete picture of the varied sources of revenue. To this end, television contracts appear to be the largest driver of revenue for conferences. Padilla and Baumer (1994) found that television was one of the greatest influences on college football. It can be argued, however, that in 1994 Padilla and Baumer, or anyone for that matter, could have imagined the role that television would play in the proliferation and popularity of the sport. Following a supply and demand curve, the case can be argued that television has the greatest impact on the rise in total revenues for institutions. Changes in the tier rights have also allowed for multiple contracts, across various networks to be negotiated.

The SEC, for example, has negotiated first tier rights with CBS and second tier rights with ESPN. This has allowed SEC games to largely dominate the prime-time football slots, largely considered to be the 3:30pm (EST) and the 8:00pm (EST) windows. Games that are not picked up by either network can be made available through a regional market carrier, or the individual institutions pay-per-view network. The total worth of these contracts averages to about $205 million a year, although those figures will be updated to include the newly launched SEC Network on ESPN. The return on this investment for these networks has been realized through television ratings.

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For the 2013 season, the SEC had six of the top ten most watched teams in college football, and had an average of 3,805,794 viewers per game (SBNation, 2013). As a point of reference, this figure was nearly 700,000 more average viewers than the AAC, MAC, C-USA, and Sun-Belt combined. The SEC also had the three most-watched games of the 2013 season, with Alabama participating in all three of those games (McGuire, 2013).

The Big Ten drew the second-most viewers in 2013 with 2,920,815. This was done over a variety of platforms including ABC, ESPN, and the Big Ten Network. The Big Ten currently pays out to its member institutions an estimated $20.7 million in television money. The ACC drew the third largest number of viewers, mostly because of its larger regional footprint, and from being home to the 2014 BCS national champion (Florida State University) and the Heisman Trophy winner (Jameson Winston). With 1,961,674 viewers, their current contract totals $3.6 billion over fifteen years, all with ESPN (Dosh, 2013). The Pac-12 inked a similar twelve year, $3 billion contract, also with ESPN and Fox. The Big-12 recently renegotiated their first tier rights with ESPN and Fox. This new thirteen year contract is worth approximately $2.6 billion over the life of the contract, but it covers a more regional television footprint than most of the other conferences. This does not include the revenue from the separate Longhorn Network, which caters specifically to the University of Texas on ESPN. Finally, Notre Dame, the largest independent institution, re-signed their deal for home games only with NBC, which has held the contract since 1991, at a rate of $15 million a year over ten years (ESPN, 2013).

There was a time where only a certain number of games were broadcast, most notably Notre Dame on NBC. Since then, television rights have evolved from regional broadcasts of multiple games, to the availability of nearly the entire game lineup on one platform or another. The increased reach and broadcast of games has positively impacted the popularity of college football in the United States. The impact that television has on the fan game experience, however, is a point of concern for some programs. Simply, the comfort and convenience of watching the game at home has begun to surpass the experience and cost of actually attending games. Some institutions have found that the thrill of being at a game is tempered by bad sight lines at stadiums, extreme weather, long lines for concessions and bathrooms, and the ability to track other games while at a stadium. Therefore, some institutions are struggling with a large number of no-shows or a drop in total attendance at home games.

The NCAA (2013) reports total attendance across all Division One programs to be 35,340,049 for the 2013 season, for an average of 45,192 per game across the country. This figure is up from a 2012 season that saw 34,312,026 fans, or an average of 44,970 per game (NCAA, 2012). The 2013 season, however, saw the addition of three new teams and nineteen more games from the year before, thus impacting the total numbers reported. Helping to illustrate the decline in attendance, the 2012 season numbers were down from the numbers reported in 2011, where there were 220,598 fewer total fans from the year before, or an average of 528 less per game. These per-game averages are below the all-time high of 46,456 in 2008 (Rovell, 2014).

These changes in fan attendance have especially been true for the younger fan, notably the students at each institution. This can be especially alarming because most institutions deeply discount the cost of tickets for their student population. According to Rovell (2014) the University of Arizona experienced a 47.6% drop in student attendance from the previous year. The number was not as pronounced at the University of Michigan, where 26% of students who had already paid to attend a game did not show. At the University of Georgia, the allotment of student tickets sold was dropped by nearly 2,000 tickets. Still, student attendance for their home games as down 28.8%. There do not appear to be many programs that are immune to these attendance drops as even the University of Alabama had 4.8% of students fail to show up to games.

These drops in attendance, however, have not dampened institutions from either increasing the capacity of their existing stadiums, making improvements to help increase fan engagement and enjoyment at games, or building new structures all together. In 2011, the University of North Texas and Florida Atlantic University both christened new stadiums (Vito, 2011; Hyde, 2011). These followed the University of Minnesota's $303 million dollar investment in TCF Bank Stadium, their private (shared previous stadium with the NFL's Vikings), on-campus stadium (Muret, 2009). The 2013 season also saw a $50 million expansion at the University of Nebraska (Nebraska, 2014), a $34 million expansion at Texas Tech University (Texas Tech, 2014), and Louisiana State University is completing a $100 million expansion to Tiger Stadium (Sports Business Daily, 2012). There are future expansions and renovations in the works at Arizona State University (Fornelli, 2014), and a $450 million dollar project at Texas

A&M University (Patterson, 2014). These expansions have largely been funded through public bonds, where the debt can be offset by years of revenue generation. In many instances, the private athletic fund-raising arm of each institution has been responsible for financing the bond initiatives.

Caro and Benton (2012) point to a recent "arms race" of sorts in college football, where erecting these large cathedrals, improving football facilities, improving game surfaces, or building museums to honor an institutions football history has created a fiercely competitive game outside the game. The end goal is not to keep up with other programs, but to outdo other programs in hopes of increasing attendance, increasing exposure, and breeding a culture of success. This also plays an important role in the recruiting wars that occur for the top-rated high school athletes. Correlations between winning and recruiting were examined by Caro (2012), and the relationship between the total expenditures in recruiting and signing the top recruiting classes (Caro & Benton, 2012). Thus, the importance of revenue cannot be underscored. There are obvious connections towards revenue generation and construction projects. Many institutions erect larger stadiums or enhance video boards to help to boost fan attendance. Other schools, however, rely on the revenue generated from football to help fuel other sports (Dosh, 2011). This is true for both AQ and non-AQ institutions. For many institutions, the total revenue generated through football is then used to fund non-revenue sports like golf, tennis, swimming and diving, and others. In addition, much of Title IX compliance is sustained through the funds that are generated through football revenue, sometimes at the expense of other men's sports (Keating, 2012). Revenue generation plays an important role in funding the athletic department; however, in some cases, the money is also funneled back to the institution's general fund. In these cases, football revenue fuels faculty grants and endowments, non-athletic scholarships, and other non-athletic institutional efforts (Smith, 2013).

Many institutions have reaped the financial benefits of their brand, notoriety, and success. Others, however, have not been so fortunate. To this end, there exist vast discrepancies in the amounts of money that are generated by institutions across the country. The largest incongruity has been noted in the BCS payouts at the end of each season. In 2011, the BCS paid out over $174 million dollars to Division One institutions. Of that money, however, 83.4% went to the automatic-qualifier conferences. This figure was up from the 81% of $142.5 million that went to the AQ conferences in 2010 (Sporting News, 2011). In 2013, each of the AQ conferences received $23.9 million, as compared to the $14.25 million that was left for the non-AQ conference institutions to split (Dosh, 2013). Caro and Benton (2012) quantified this difference and found that there existed significant differences in the revenue earnings of AQ and non-AQ institutions. That study, however, did not quantify those differences.

Thus, this study seeks to build upon the existing extant literature, and expand on the work of Caro and Benton (2012) by examining the impact of a set of independent variables on total reported revenues from 2002 to 2012. Specifically, this study explores the reported and perceived differences in total revenue amongst Division One institutions. Further, the study quantifies the differences in total revenue through ANOVA, correlations, and regression analysis, of being in a BCS automatic-qualifier conference, the effect of playing in a BCS game, and the impact of winning a BCS game. This study seeks to answer:

1. Does there exist a difference in the total revenue generated by the AQ and non-AQ institutions examined in this study. (an expansion of Caro and Benton, 2012).
2. Does there exist a significant difference in the total revenue generated from year to year of the study.
3. Does there exist a significant difference in the revenue generation according to participation in a BCS game?
4. Does there exist a significant difference in the revenue generation according to winning a BCS game?

METHODS

Football revenue, the dependent variable, for institutions participating in the eleven college football Division One conferences was obtained from the Department of Education's Office of Postsecondary Education. The data was available from the Equity in Athletics website. Conference alignment was addressed in each year of the study. For example, the University of Utah moved from the Mountain West to the Pac-12 in 2011. Thus, they were coded to have belonged to the Mountain West for the initial part of the study, and then coded for the Pac-12 in the corresponding years. This was done for the other teams that re-aligned themselves over the course of the study,

including but not limited to Brigham Young, Texas A&M, Missouri, and Nebraska. Teams were then dummy coded according to their inclusion in an automatic-qualifier conference.

Wins and losses, playing in a BCS game, and winning a BCS game were selected as independent variables. These were selected as their impact has not been quantified in the existing literature. Wins and losses were downloaded from the NCAA website and recalculated as a winning percentage by taking the number of wins and dividing it by the total number of games played. The BCS website was used to find the institutions that participated in BCS games. The scores were found to determine the winner. Those teams were then dummy coded to create two dichotomous variables.

Descriptive statistics were formulated for each of the variables in the study; however, only revenue statistics are reported. The remaining statistics were checked to ensure data integrity. Analysis of variance (ANOVA) was used to determine the extent to which significant differences existed in total reported revenue accordingly. ANOVA was conducted for revenue: by each year in the study, according to conference, by BCS qualification status, and by winning a BCS game. The Games-Howell post-hoc test was used to detect significant differences among the multilevel factors. Games-Howell was selected as it does not assume equal variances, is appropriate when the assumption of homogeneity of variance is violated, and is recognized as a robust measure when the assumptions of ANOVA are violated (Games & Howell, 1976; Jaccard, Becker, & Wood, 1984; Sullivan, Riccio, & Reynolds, 2008). Finally, Pearson's product-moment correlation was used to determine the correlation of the continuous measures, and simple linear regression was used to model the relationship between the independent and dependent variables.

LIMITATIONS

Data for this study was collected from the Department of Education's Office of Postsecondary Education. The data was available from the Equity in Athletics website. This data was self-reported and thus may not paint a complete picture of the total revenue the institution. Further, this data may include revenue that was provided by the institution. In some cases, some football programs take no money from their universities. Further, while the BCS began in the 1998 football season, data from the DEO was not available for the full life of the BCS. Thus, this data only provides a more recent snapshot of the revenue growth for the schools. The period sample from 2002 to 2012 also represents the data that was available on the website. Finally, data was not available for any of the United States Service Academies. Thus, they were not included in the sample.

RESULTS

The results of Table 1 A-D (the table was broken up to help it fit) indicate the total revenue, as reported by the institution, per year by conference in Division One football and the percent change per reported year. The data indicates that the SEC, the Big Ten, and the Big Twelve led in revenue generation amongst all schools, while the MAC, the WAC, and Sun-Belt, generated the least. The greatest jumps in revenue occurred from 2002 to 2003 (16.09%), from 2005 to 2006 (11.34%), and from 2006 to 2007 (10.74%). The results of Table 1 also indicate that the revenue generated by the SEC was 89% greater than the MAC, and was 90.13% and 93.57% greater than the WAC and Sun-Belt conferences respectively. The results further illustrate the exponential growth that occurred in revenue through the years of the study. The change from $1,316,122,390 in 2002 to a study-high of $3,148,413,520 in 2012 represents a 139% increase in the ten years. The differences in revenue amongst conferences are consistent with the findings of Caro and Benton (2012). These differences begin to paint the picture of revenue inequality across the various conferences in Division One football.

The sum of the total revenue for non-AQ conferences (exclusive of the Independents) over the course of the study amounts to $3,255,634,424. This is less than the total revenues for both the SEC and the Big Ten, and only slightly more than the sum for the Big 12. These figures point to the influence of supply and demand on the product. The impact of television and licensing revenue is also apparent. The television contracts for the SEC, Big Ten, and the Big 12 allow for national, prime-time coverage of a large majority of their games. This increased exposure leads to greater television revenue and demand for their licensed products. The results also begin to point to the monetary impact that inclusivity in the BCS brought to the AQ conferences.

Table 1 also illustrates the revenue prowess of Notre Dame. Independent of any conference, Notre Dame generated $634,491,124 in total revenue over the ten years of the study. This is more than the MAC, WAC, and Sun-Belt conferences. The impact of their licensing efforts, independent television contract, and donor donations comes into focus. It also begins to explain why the Independent has been such a major player in conference re-alignment, television renegotiations, and their special rules for participating in the BCS.

Table 1A: Summary of Total Revenues by Year per Conference from 2002-2012 as Reported by the Institution

Conference	Total
SEC	$5,646,227,003.00
Big 10	$4,367,604,123.00
Big 12	$3,716,411,937.00
Pac 10	$2,703,916,158.00
ACC	$2,617,303,159.00
Big East	$1,395,091,799.00
CUSA	$961,772,730.00
MWC	$725,660,502.00
Independents	$681,093,078.00
MAC	$648,012,199.00
WAC	$557,190,212.00
SUN	$362,998,781.00
Total	$24,383,281,681.00

Table 1B: Summary of Total Revenues by Year per Conference from 2002-2012 as Reported by the Institution

Conference	2002	2003	2004	Total 2002-2004
SEC	$326,429,667.00	$350,193,187.00	$353,581,348.00	$1,030,204,202.00
Big 10	$231,154,911.00	$276,809,402.00	$306,293,700.00	$814,258,013.00
Big 12	$194,825,701.00	$258,812,764.00	$267,709,687.00	$721,348,152.00
Pac 10	$165,307,234.00	$176,744,243.00	$183,767,586.00	$525,819,063.00
ACC	$151,138,784.00	$180,171,498.00	$180,969,299.00	$512,279,581.00
Big East	$68,495,928.00	$79,813,597.00	$94,266,882.00	$242,576,407.00
CUSA	$40,030,965.00	$62,183,378.00	$56,665,466.00	$158,879,809.00
MWC	$39,693,294.00	$53,061,049.00	$54,614,378.00	$147,368,721.00
Independents	$38,238,900.00	$48,752,420.00	$47,701,920.00	$134,693,240.00
MAC	$21,138,277.00	$33,280,645.00	$32,828,560.00	$87,247,482.00
WAC	$29,870,760.00	$34,188,546.00	$30,782,632.00	$94,841,938.00
SUN	$9,797,969.00	$14,473,446.00	$13,584,198.00	$37,855,613.00
Total	$1,316,122,390.00	$1,568,484,175.00	$1,622,765,656.00	$4,507,372,221.00
Percent Change		16.09%	3.34%	

Table 1C: Summary of Total Revenues by Year per Conference from 2002-2012 as Reported by the Institution

Conference	2005	2006	2007	Total 2005-2007
SEC	$395,892,365.00	$457,876,320.00	$510,288,867.00	$1,364,057,552.00
Big 10	$341,794,601.00	$370,212,057.00	$410,093,135.00	$1,122,099,793.00
Big 12	$279,319,363.00	$297,142,603.00	$362,080,514.00	$938,542,480.00
Pac 10	$202,534,973.00	$229,138,691.00	$251,420,850.00	$683,094,514.00
ACC	$181,297,148.00	$225,225,984.00	$234,427,459.00	$640,950,591.00
Big East	$116,443,949.00	$121,682,518.00	$131,372,797.00	$369,499,264.00
CUSA	$66,027,921.00	$82,838,971.00	$87,811,192.00	$236,678,084.00
MWC	$58,580,534.00	$55,831,524.00	$72,647,900.00	$187,059,958.00
Independents	$67,099,729.00	$63,675,034.00	$59,774,851.00	$190,549,614.00
MAC	$36,497,258.00	$48,435,895.00	$64,371,355.00	$149,304,508.00
WAC	$35,913,363.00	$46,912,940.00	$57,217,897.00	$140,044,200.00
SUN	$17,594,336.00	$30,232,524.00	$31,804,199.00	$79,631,059.00
Total	$1,798,995,540.00	$2,029,205,061.00	$2,273,311,016.00	$6,101,511,617.00
Percent Change	9.80%	11.34%	10.74%	

Table 1D: Summary of Total Revenues by Year per Conference from 2002-2012 as Reported by the Institution

Conference	2008	2009	2010	Total 2008-2010
SEC	$537,145,739.00	$607,163,802.00	$640,229,277.00	$1,784,538,818.00
Big 10	$419,032,875.00	$446,359,908.00	$466,123,523.00	$1,331,516,306.00
Big 12	$398,107,566.00	$424,468,907.00	$431,271,998.00	$1,253,848,471.00
Pac 10	$255,810,821.00	$246,332,171.00	$252,858,608.00	$755,001,600.00
ACC	$258,032,389.00	$250,773,784.00	$278,558,264.00	$787,364,437.00
Big East	$144,369,048.00	$150,453,242.00	$152,836,183.00	$447,658,473.00
CUSA	$95,072,401.00	$111,383,042.00	$114,223,559.00	$320,679,002.00
MWC	$84,838,003.00	$90,926,059.00	$105,176,368.00	$280,940,430.00
Independents	$56,929,397.00	$64,163,063.00	$68,782,560.00	$189,875,020.00
MAC	$68,446,821.00	$75,721,423.00	$80,508,627.00	$224,676,871.00
WAC	$55,704,030.00	$62,494,337.00	$67,120,620.00	$185,318,987.00
SUN	$33,866,013.00	$42,257,602.00	$50,714,783.00	$126,838,398.00
Total	$2,407,355,103.00	$2,572,497,340.00	$2,708,404,370.00	$7,688,256,813.00
Percent Change	5.57%	6.42%	5.02%	

The rate of growth is also of interest as it can point to changes in revenue generation for each particular year. Table 2 presents the ANOVA for total revenue as analyzed by each year. The significant ANOVA indicates that there are significant differences through the years, and the Games- Howell post-hoc tests help to identify those significant differences. Expectedly, the data seems to indicate a rate of growth that normalizes after dramatic increases from 2005 to 2006 (11.34%), and from 2006 to 2007 (10.74%). This pattern can be discerned in the post-hoc results for 2002 as it was significantly different from every year including and after 2006. Equally, the results for 2012 indicate that there was no significant difference from each year including and after 2007. The results also indicate that revenue for each subsequent year, for example 2003 to 2004, was not statistically significant. Moreover, after 2007, total revenue was greater for each subsequent year; however, the difference was not statistically different. Thus, the revenue for 2007 was not statistically different from 2008, 2009, 2010, 2011, and 2012. Thus, year to year differences are not observed in the data; however, differences begin to be observed the year after. Thus, there appears to be a gradual growth over the course of the study, with the exception of 2005 to 2006 and 2006 to 2007. The advent of television contracts can be responsible for these differences. Thereafter, the signing of these major network contracts normalized and the revenue from those did as well.

Table 2: ANOVA Results for Total Revenues by Year for 2002-2012

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	29853208626561600.000	10	2985320862656160.000	10.096	.000
Within Groups	3743599770607634000.000	1266	295702820385177.000		
Total	4042129792342196000.000	1276			

Table 3 presents the results of an ANOVA for the total revenue by conference affiliation. The results of the ANOVA indicate that there is a significant difference among the total revenue of the Division One football conferences (Table 1A). The Games-Howell post-hoc tests indicate where these differences occur, and they reveal the revenue chasm that deepened through the period of the study. The data indicates that the SEC produced only one statistically insignificant difference from its peers, and that came from the Big Ten. Thus, while there is a $1,278,622,880 difference in revenue, statistically, the SEC and the Big Ten were similar with respect to revenue generation. The Big Ten was also statistically similar to the Big Twelve, while the Big Twelve was statistically similar to the Pac-Ten. Finally, the Pac-Ten was statistically similar to the ACC. Thus, while there were statistically significant differences from the top earners of the AQ to the bottom earners of the AQ conferences, there were still relationships amongst each of those power conferences. The Independents, largely due to the revenue generation of Notre Dame, were statistically similar to the AQ conferences, as they produced statistically significant differences to C-USA, the MWC, the MAC, the Sun-Belt, and the WAC conferences.

The data ascertains, however, that each of the AQ conferences was statistically significantly different from the non-AQ conferences. The results of this ANOVA are consistent with the findings of Caro and Benton (2012) and confirm that income inequality does exist in Division One football. The sources of this inequity have been explored, and their implications are discussed shortly.

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Table 3: ANOVA Results for Total Revenue by Conference from 2002-2012

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2159994473952802000.000	11	19635861268436500.000	131.971	.000
Within Groups	1882185505281394000.000	1265	148789332238256.000		
Total	4042129979234196000.000	1276			

Examination of revenue data by automatic-qualification status (Table 4) helps to further quantify the differences among institutions. The mean revenue generation for a non-AQ conference institution was nearly 75% less than that of their AQ peers. This difference ($\bar{X} = \$6,992,411$ for non-AQ and $\bar{X} = \$28,636,630$ for AQ) was statistically significant (F = 732.33). Equally, the standard deviations for each of the cohorts indicate that there are vast differences amongst institutions within each group, a result consistent with Caro and Benton (2012). It is important to remember that the non-AQ values, however, are inflated due to the inclusion of Notre Dame as a non-AQ institution. Outside of Notre Dame, Texas Christian University reported the largest non-AQ revenue in 2011 at $25,984,011. This figure was largely bolstered by their appearance in a BCS game that football season. Still, TCU appears to be a non-AQ outlier in this study. Outside of TCU, the University of Utah ($16,388,182) in 2008 and Boise State University ($14,515,613) in 2009 reported the greatest single season revenues for a non-AQ institution. For Utah and Boise State, this occurred in a season where they were invited to play in a BCS game. In fact, short of appearances in BCS games, the results indicate that non-AQ institutions could not keep pace with their Division One peers. Anecdotally, this helps to understand the influence of playing in a BCS game has on total revenue. This relationship was explored in greater detail.

Mean revenue distributions for schools that played in a BCS game illustrate that those institutions benefited from the exposure and monetary compensation for playing in a BCS game. From 2002 to 2012, institutions that participated in a BCS game reported mean revenues of $40,457,497, compared to mean revenues of $17,239,673 for those that did not play in a BCS game. As expected, ANOVA analysis indicated that this difference was statistically significant (F = 182.42). Still, this does not paint a full picture of the revenue disparity as these cohorts were composed of both AQ and non-AQ schools and only grouped according to participation in BCS games. In an attempt to control for the larger earning potential of AQ schools, the cohorts were further separated to AQ schools that participated in BCS games and non-AQ schools that participated in BCS games. The average revenue for a non-AQ institution that participated in a BCS game ($\bar{X} = \$14,707,945$) was statistically different (F = 11.571) from their AQ counterparts ($\bar{X} = \$41,818,829$). Therefore, even when the non-AQ institutions were able to gain access to a BCS game, it did not bring them the same monetary reward as it did for their AQ counterparts. This revenue difference can begin to be explained by the methodology employed to distribute BCS revenue. Automatic-qualifier conferences were guaranteed a share of the BCS revenue distribution even if they did not participate in these games. Thus, institutions like Mississippi State, Duke, or Wake Forest, who have never participated in a BCS game, still accessed equal payouts at the end of the season. Schools that participated in a BCS game also received an additional payout for participating in the game. While non-AQ schools received the same access to funds the initial percentage of that payout was substantially lower. Thus, AQ conference schools had access to a larger pool of revenue that was not accessible to the non-AQ institutions. Therefore, despite access to these more lucrative bowl games, non-AQ institutions could not equal the BCS revenue of their AQ counterparts.

Table 4: Total Revenues by BCS Qualification Classification for 2002-2012

	N	Mean	Std. Deviation	Minimum	Maximum
Non-AQ	563	$6,992,411.19	$8,213,323.36	$550,265.00	$78,349,132.00
AQ	714	$28,636,630.50	$17,519,077.94	$3,344,401.00	$109,400,688.00
Total	1277	$19,094,190.82	$17,798,351.94	$550,265.00	$109,400,688.00

Expectedly, institutions that played in and were victorious in a BCS game ($\bar{X} = \$43,010,955$) saw a statistically significant mean revenue difference (F = 103.64) from teams that did not participate in a BCS game ($\bar{X} = \$18,099,284$). This is true largely as the cohort was the same as the previous cadre of teams. However, when this cohort was limited to only teams that had played in a BCS game, the mean revenue difference between teams that won the game ($\bar{X} = \$43,010,955$) and those that lost the game ($\bar{X} = \$37,904,040$) was not statistically significant (F = 1.461).

The noted differences in mean revenue across qualification status and BCS game participation were examined further through correlational analysis. Table 5 summarizes the Pearson Correlation Coefficients along various relationships.

**Table 5: Pearson Correlations between Football Revenue and Select Variables for all
Division One Football Institutions from 2002 – 2012**

		Revenues	Total Wins	Total Losses	Winning Percentages	BCS Game	BCS Win	Qualifier
Revenues	Pearson Correlation	1	.403	-.377	.390	.354	.274	.604
	Significance		.000	.000	.000	.000	.000	.000
	N	1277	1277	1277	1277	1277	1277	1277

Each of the examined correlations were significant ($\alpha = 0.05$). The strongest correlation, as expected, was to automatic-qualification status, while the weakest correlation was to winning a BCS game. Interestingly, total wins produced a slightly stronger, positive correlation than did winning percentage, despite the fact that they measure the same outcome. This, however, may be attributed to the existence of a potential fan bias towards wins. Fans tend to recognize records from a won/loss perspective more than by winning percentage. Media coverage of teams also tends to report wins and losses and not winning percentage; thus, many fans are not trained to recognize or interpret winning percentages. This may have a potential influence on the donor rates of alumni and fans back to the institution. Alternatively, the greater number of wins tends to be associated with some sort of post-season play; thus, teams that win their respective conferences have the ability to participate in the lucrative Conference Championship Game and, potentially, a BCS game. Thus, a team that wins twelve or thirteen games would have potentially played in a conference championship game and thus earned more revenue. This would then impact the correlational relationship. Still total wins indicates a stronger, positive correlation than having participated in a BCS game. This relationship presents an interesting paradigm with respect to the flow of the varied revenue streams for different institutions, and perhaps an avenue of further research.

An examination of the year to year correlations expands differences in the magnitude of the correlations. Table 6 summarizes the Pearson Correlations according to each year of the study. Each of the correlations was statistically significant ($\alpha = 0.05$). The correlations help paint an interesting picture of what impacted revenue each year; still, the strongest, positive relationship exists between qualifier status and revenue. The BCS changed the qualification rules in the 2004-2005 season, where a non-AQ school could potentially qualify for one of the BCS games should it be in the top 8 of the final BCS poll, or be in the top 16 and ranked higher than at least one of the automatic-qualifier champions. This opened the door for the University of Utah, Texas Christian University, and Boise State University to gain access to the BCS game, and BCS game money, thus ending the non-AQ exclusion from the post-season. The correlation between qualifier status and revenue drops slightly following the 2004 year; however, this relationship has become stronger since 2011. There are several factors that can attribute to this. First, the amount of money distributed by the BCS has become more lucrative (Smith, 2010; Sporting News, 2011; Solomon, 2013). Thus, AQ conference institutions had larger takings due to the increased payouts from the BCS. Concomitantly, many of the power conferences re-signed their television contracts, and this has created a windfall of revenue for many of the top conferences. As noted, the SEC, which is set to launch their own network on the ESPN family of channels in August of 2014, has one of the richest television contracts and dispersed approximately $289.4M to its fourteen member schools in the 2012-2013 year (Forbes, 2013), up from $244M the year before. The Big Ten distributed more than $26M to each of its schools in the same fiscal year, and that value is expected to rise substantially over the course of the next few years as new member institutions Maryland and Rutgers extend the television footprint of the conference. The Big 12 is not lagging far behind with a conference payout of nearly $200M. These payouts make it difficult for the non-AQ schools to remain financially competitive, and bolster the relationship between AQ status and revenue.

Accordingly, the data indicates a decrease in the relationship between winning percentage and revenue, not because it isn't important to fan donation, alumni support, or merchandising, but because the value of the television contracts has largely decreased the dependency of the top power conferences on other forms of revenue. Automatic-qualifier institutions enjoy the windfall of revenue even if they never participate in one of the BCS games. While those add to the prestige of the university, and help to bolster recruiting (Caro, 2012), television contracts and

automatic BCS payouts put substantially less pressure on these institutions to win. This is not to discount the importance of success; however, with built-in guarantees, those schools could suffer through a down cycle and still not have to face financial hardships. Thus, institutions like Purdue from the Big Ten can average nearly $20.6M in revenue despite only average 6.3 wins per season, or the University of Colorado can average over $24.5M with only 4.9 wins per year. This can be compared to Boise State, who only averaged a little over $9.6M a year despite an average win total of 11.7. This provides further evidence of the impact of television and the BCS on these growing discrepancies in revenue.

The connection between revenue and winning percentages helps to understand the added revenue that may come from merchandising, attendance, and alumni giving. Some schools, like the University of Texas, seem to be immune from the pressures of winning – Texas experienced gains in their total revenue despite posting their lowest win totals in the last three years of the study. Outside of Texas as an apparent outlier, there data indicates that there exists a positive relationship between winning and revenue. The University of Notre Dame finished an undefeated season in 2012 and played the University of Alabama in the BCS National Championship game. In that run, Notre Dame played each of its twelve regular season games were broadcast nationally, splitting between NBC and ABC. Of those telecasts, six were in the national prime-time slot on either of the two networks. The added exposure helped Notre Dame realize a 12% growth in their reported revenue. This could come from the added merchandise sales from the successful season, and the proceeds of playing the BCS game. This same relationship, although with varied percent increases, exists for teams when they played in BCS games for the University of Florida, the University of Georgia, Auburn University, the University of Alabama, the University of Michigan, and Louisiana State University. In the case of the SEC teams, however, it should be noted that those teams also benefited from participating in the SEC Championship Game. Still, the impact of winning is still largely evident.

Interestingly, the strength of the correlation between revenue and winning percentage differs depending on qualification status. The Pearson correlation between winning percentage and revenue is 0.385 for an AQ-conference institution, compared to 0.206 for their non-AQ conference peers. Further, playing in a BCS game indicates a greater magnitude of relationship for non-AQ institutions (0.382) than for the AQ institutions (0.288). This can be expected due to the additional revenue paid to the participating team and, to some extent, the conference, which resulted from playing in one of the BCS games. Thus, these results help to quantify the importance of playing in a BCS game for these non-AQ institutions. Simply, non-AQ schools had more to gain, either from exposure, merchandising, or from the additional BCS participation revenue, from playing in a BCS game than did their AQ counterparts.

Table 6: Correlations between Revenue and Select Variables by Year from 2002-2012 for all Division One College Football Institutions

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Revenues	1	1	1	1	1	1	1	1	1	1	1
Winning Percentages	.431[**]	.323[**]	.422[**]	.485[**]	.493[**]	.385[**]	.364[**]	.443[**]	.411[**]	.405[**]	.351[**]
BCS Game	.290[**]	.391[**]	.388[**]	.536[**]	.420[**]	.300[**]	.469[**]	.357[**]	.289[**]	.359[**]	.294[**]
BCS Win	.341[**]	.317[**]	.290[**]	.398[**]	.219[*]	.228[*]	.306[**]	.337[**]	.255[**]	.318[**]	.199[*]
Qualifier	.683[**]	.660[**]	.650[**]	.623[**]	.629[**]	.647[**]	.642[**]	.617[**]	.610[**]	.640[**]	.666[**]

** Significant at $\alpha = 0.05$

Regression analysis examines the relationship amongst the variables, and explains the amount of variance seen in the revenue distributions observed in the sample. It further helps to quantify the differences found in ANOVA and correlation analysis as it explores the magnitude of the relationship, and how much of the variance in revenue can be explained by the independent variables. Table 7 summarizes the resulting, significant regression models and presents the correlations and coefficients of determination (r^2) for each.

Table 7: Summary of Step-Wise Regression for Predicting Revenue for Division I College Football Institutions 2002-2012

	R	R^2	Adjusted R^2	Std. Error of the Estimate	Entered Predictors
2002	0.742	.550	.538	7119710.05	Constant, Qualifier, Winning Percentages, BCS Win
2003	0.701	.492	.483	8671897.093	Constant, Qualifier, BCS Game
2004	0.727	.528	.515	8912272.667	Constant, Qualifier, BCS Game, Winning Percentage
2005	0.78	.608	.597	9248817.071	Constant, Qualifier, BCS Game, Winning Percentage
2006	0.744	.553	.541	10825180.41	Constant, Qualifier, Winning Percentage, BCS Game
2007	0.672	.452	.442	12879175.65	Constant, Qualifier, Winning Percentage
2008	0.727	.528	.520	12497926.98	Constant, Qualifier, BCS Game
2009	0.705	.497	.484	14016211.92	Constant, Qualifier, Winning Percentages, BCS Win
2010	0.663	.440	.430	15332892.11	Constant, Qualifier, Winning Percentage
2011	0.705	.497	.484	15257910.61	Constant, Qualifier, Winning Percentages, BCS Win
2012	0.711	.506	.497	15755180.5	Constant, Qualifier, Winning Percentage
All Year	0.670	.449	.447	13229705.73	Constant, Qualifier, Winning Percentage, BCS Game

The results of regression analysis indicate that for all years 2002 to 2012, the coefficient for the relationship (r = 0.670) for the model composed of the independent variables of qualification status, winning percentage, and participation in a BCS game, was found to be significant (F = 361.00; p < 0.001), indicating a strong, positive relationship for the independent variables and revenue. The coefficient of determination (r^2) was 0.449, indicating that for all institutions from 2002 to 2012, 45% of the variance in revenue could be explained by qualification status, winning percentage, and participation in a BCS game. So, the combination of these independent variables accounts for nearly half of the variance in revenue across all schools, which can mean that other factors, such as attendance, merchandise sales, and alumni giving, can explain the remaining variance. The impact of those additional factors must be explored; however, Caro and Benton (2012) reported that attendance accounted for nearly 62% of the variance in revenue for AQ schools, and 25% of the observed variance for non-AQ schools.

Analysis of the descriptive statistics, ANOVA, and correlations describe the differences in revenue between AQ and non-AQ institutions, and the "head start" brought by belonging to an AQ conference can be measured through the beta coefficients of the resulting model equations. The overall model discussed above produced a resulting, significant regression equation of Y = 9,428.77 + 18,831,582.71 (Qualification Status) + 14,905,324.83 (Winning Percentage) + 10,895,733.00 (BCS Game). Thus, when others were held constant, institutions that belonged to an automatic-qualifying conference stood to gain an average of nearly $18.9 million more than their non-AQ counterparts. This helps enumerate the impact of belonging to an AQ conference. The model indicates that playing in a BCS game was worth, roughly $10.9M over the course of the study. An undefeated season could potentially draw the institution over $14.9M. It is important to remember, however, that the coefficient for winning percentage is slightly skewed due to the varied correlational relationship among AQ and non-AQ institutions. Still, this equation helps to understand the variance in the revenue numbers and illuminates the stark disadvantages that non-AQ institutions faced as a result of the BCS era.

These results are well illustrated when examining the revenue for Texas Christian University (TCU) and the University of Utah, both of which joined AQ conferences over the course of this study. TCU averaged a little under $14.7M as a member of the Mountain West Conference. In their first year in the Big Twelve, however, they posted revenues just above $34.4M. These figures are just as pronounced for Utah, who left the Mountain West Conference for the Pac-12 in 2011. As a member of the Mountain West, they averaged over $11.8M a year. Since joining the Pac-12, their reported average revenue has soared to $24.2M. These results highlight the impact of playing in an AQ conference and help to enumerate the resulting regression equation presented above.

While BCS games, BCS wins, and winning percentage play a varied role in each of the significant models, only qualifier status (Table 8) remains significant in each of the models. The variance in revenue that is explained by qualification status ranges from a low in 2010 (r^2 = 0.372) to a high in 2002 (r^2 = 0.467). Still, at a range between 37% to nearly 47%, conference affiliation plays a significant role in the amount of revenue generated by each institution. The increased exposure enjoyed by these AQ conference institutions may be one reason for the stark differences in revenue, and television contracts are a significant source of revenue. These power conferences enjoyed the benefits that the BCS era brought, and they took advantage of the built-in advantages that the era

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brought. The popularity of the game soared and as the availability of the games on television increased, fans flocked to their television sets to watch.

In 2013, the SEC (3,805,794 million), the Big Ten (2,920,815 million), and the ACC (1,961,674 million) drew the most number of viewers for their games (Sporting News, 2013). Moreover, five of the top ten most watched teams were from the SEC, with the University of Alabama drawing the most average viewers at 6,465,000 million. By comparison, Boise State University, arguably the most recognizable non-AQ institution, drew only 1,189,429 million viewers. In week three of the 2012 season, the Alabama versus Texas A&M game drew 13,590,000 viewers on CBS in the afternoon time slot; the Marshall University versus Ohio University game played later that evening drew 86,000 viewers in prime-time for one of the ESPN family of networks. These differences exist throughout the football season. Understanding some of these numbers helps to underscore the importance of conference affiliation. Fans watch college football in droves; however, they are cognizant of the product on the field. A mid-week game between two MAC schools on ESPN is not going to draw the same number of viewers as a Thursday night SEC game. Thus, the television contracts signed by AQ conference will always be more lucrative than those of the non-AQ institutions, thus severely limiting the revenue-generating ability of many of these individual institutions.

Table 8: Coefficient of Determination for Step-Wise Regression Analysis for
Qualification Status on Revenue by Year for 2002-2012

Year	r^2
2002	0.467
2003	0.436
2004	0.423
2005	0.388
2006	0.396
2007	0.419
2008	0.412
2009	0.38
2010	0.372
2011	0.41
2012	0.444

CONCLUSIONS

The BCS era in college football proved to be beneficial on many fronts for college football. Despite the controversy that it created in matching the top two teams in the national championship, it was successful in capturing new levels of excitement for the regular season. To this end, the popularity of the sport soared, and this is largely represented in the lucrative television contracts that each of the power conferences signed over the last few years. This study concluded that from 2002 to 2012, Division One football institutions amassed $24,383,281,681 in total revenue. Still, the BCS era may be remembered for the pronounced differences that it created between the AQ and non-AQ conference institutions. While the BCS itself cannot be held accountable for the apparent segregation of these two cohorts, the financial windfall that college presidents and administrators created for their schools was not accidental. There were also calculated, deliberate differences in the distribution of the revenue that further breached the parity of these two cohorts.

With respect to the research questions, the results of this study confirm and expand on the findings of Caro and Benton (2012) that there are significant differences in the total revenue generated by AQ and non-AQ institutions. Again, the BCS is not necessarily responsible for creating these differences; however, the role that revenue distribution played in perpetuating this difference in noteworthy. Belonging to an AQ conference gave those institutions an $18.8M advance on their non-AQ counterparts. Regression analysis confirmed that AQ classification accounted for 37% to 47% of the variance in total revenue. This study has explored some of the major factors that helped the AQ conference institutions maintain their grip on television, ratings, and merchandising. This difference in funding also provided them with an inherent advantage in the quality of product on the field.

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At the basic level, the quality of the product on the field largely fuels the supply and demand of the product. As AQ schools continued to play exciting, meaningful games, the value of the product on the field increased. As these teams continued to compete for conference and national championships, high quality recruits continued to want to play for these institutions. In effect, the BCS created a cycle of success, where the top earning schools, who maximized their television exposure, and extended the reach of their brand, capitalized fully on the system. For example, the SEC won seven straight BCS national championships from 2006 to 2012. This was accomplished by only four different schools. This cycle of success, however, helped to increase the exposure of the conference, and some would argue, parity within the conference. However, as Caro (2012) reported, there were staggering differences in the quality of recruiting classes even among the difference conferences, and in some instances, this led to poorer competition on the field. In short, these differences in revenue stream held parity from reaching the sport. Schools that experienced gains in revenue then used that to build better facilities, hire better coaches, and separate themselves from their peers. It can be argued that this was largely due to the initial classification system used by the BCS.

With respect to research question two, there are significant differences that exist in total revenue from year to year of the study. These differences, however, are not seen in consecutive years. Rather, these differences appear after a year has lapsed. Thus, it can be concluded that there was a gradual growth in the total revenue and not an exponential explosion. Still from 2002 to 2012, total revenue more than doubled which points to the dramatic increase in the popularity and exposure for the sport.

Research question three asked if there were significant differences in revenue according to participation in a BCS game. The results of this study are multi-faceted. First, the results confirm that significant differences do exist between teams that did participate in a BCS game and those that did not. The outcome was expected, thus the sample was differentiated to examine the relationships further. When the cohort was separated by qualification status, the results illustrate an even deeper issue. When taken as a complete sample, teams that participated in a BCS game generated an average revenue of $40.5M; however, when classification status was controlled for, non-AQ schools that participated in a BCS game only averaged $14.7M. Thus, even when these non-AQ schools qualified for a BCS game, the revenue that they generated was nearly $30M less than their AQ peers. Still, this value was significantly different from the non-AQ non-BCS game average, which confirms the significance of playing in a BCS game. Still, the impact was markedly different for AQ and non-AQ schools.

Finally, research question four was also confirmed. Schools that played in and won a BCS game generated greater revenue than those that did not participate in a BCS game. Thus, the added exposure and revenue gained from playing and winning a BCS game was significant. However, this result was also largely expected. Thus, the cohort was further controlled to only include those teams that had participated in the game. When this was done, teams generated an average of $6M more when they won the game; however, this difference was not statistically significantly different. This can be largely attributed to the similarities amongst these schools. The differences noted between those schools that won versus those that lost these games most likely can be explained by conference-level differences in television revenue. Further, the pool of teams that lost these games also includes non-AQ schools that entered the game with a great disparity in earning potential.

In total, the impact of the BCS cannot be discounted. The sport experienced exponential growth over the lifetime of the BCS, and that growth is best captured through the proliferation of revenue. Much of the income can be traced back to the lucrative television contracts and BCS payouts enjoyed by the institutions. Here, the discrepancies in revenue are highlighted and quantified. Moving forward, a line in the sand has been drawn between the power conferences and the rest of Division One football institutions. Those institutions that control the money have also controlled access to the money. The impact on the quality of the sport, the demand of certain factions of the sport, and parity within the sport must all be recognized. Moving forward, the sport has opted for a four-team playoff to determine the national champion, but many of the rules remain the same. Administrators and athletic directors are indeed standing at a crossroad and must determine what is best for all participating institutions so that parity and equality are restored. Then again, the results of this study largely indicate that parity and equality were never priorities of the now departed BCS.

AUTHOR INFORMATION

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