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AN EMPIRICAL EVALUATION OF EADA AND NCAA COLLEGE SPORTS FINANCIAL DATA: APPLICATIONS FOR RESEARCH AND LITIGATION

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I. INTRODUCTION

Empirical data detailing the finances of collegiate athletic programs, particularly those participating under the umbrella of the National Collegiate Athletic Association (NCAA) have been of great interest to education professionals, journalists, researchers, and litigators, particularly those involved in Title IX cases. In the economics field these data have been used to evaluate the evidence for an “arms race” among collegiate programs, in which institutions compete to build increasingly lavish facilities to attract top recruits. Other areas of study have included the increases in coach compensation and the returns to the institution, the widening rift between the financial positions of autonomy conference¹ (Power 5) members and the rest of the NCAA Division I members, the applicability of the Bowen Revenue Theory of Cost² to ostensibly nonprofit college athletic departments, and the effects of increasing athletic revenues on institutional ability to act as a throttling mechanism on the power accrued by athletic departments.

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1. The autonomy conferences are the Atlantic Coast Conference (ACC), Big Ten, Big 12, Pac-12, and the Southeastern Conference (SEC). See Brian Bennett, *NCAA Board Votes to Allow Autonomy*, EPSN (Aug. 8, 2014), http://www.espn.com/college-sports/story/_/id/11321551/ncaa-board-votes-allow-autonomy-five-power-conferences.

2. HOWARD R. BOWEN, *THE COSTS OF HIGHER EDUCATION* (1980). “The basic concept underlying the revenue theory of cost is that an institution’s educational cost per student unit is determined by the revenues available for educational purposes.” *Id.* at 17. “Each institution raises all the money it can [and] [e]ach institution spends all it raises.” *Id.* at 20.

On the legal front, financial data, notably scholarship expenditures collected pursuant to the Equity in Athletics Disclosure Act (EADA), have been used in adjudicating claims brought under Title IX of the Education Amendments Act of 1972, which states that “[n]o person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance.”³ Revenue and expense data have also been used in antitrust litigation to underscore the disparity between multi-million dollar revenues and coach compensation observed among high-profile collegiate athletic programs and the collusively-set restrictions imposed by NCAA members on athlete compensation.

Media articles discussing the financials of college athletic programs are legion. Some rely on EADA data to report on the profitability of football programs.⁴ One particular outlet, *USA Today*, maintains a database of NCAA Division I member finances obtained from public records requests to individual institutions.⁵ These data are also widely used to report on the financial condition of athletic departments and the nature of their expenditures. Expenditure data are also used to document the often staggering costs of athletic facilities, including hundreds of millions of dollars spent on individual stadium renovations.⁶ In addition, the Knight Commission on Intercollegiate Athletics (Knight Commission) maintains and makes available a dataset composed of data from multiple sources that details the expenditures of various public university athletic departments in the NCAA.

Given the widespread reliance on such financial information in research, litigation, and journalism, the reliability of the data collected by various sources is of particular interest. This Article details the various sources of college athletics financial data, discusses their advantages and shortcomings, and evaluates the inter-dataset consistency with respect to key financial variables such as revenues and expenses. The implications of existing data errors and shortcomings for researchers and litigants relying on these sources are discussed.

3. Title IX of the Education Amendments Act, 20 U.S.C. § 1681 (2019).

4. See, e.g., Jeff Jeffrey, *How Stanford's Football-Profit Machine Compares to Notre Dame and Other Top Teams Nationwide*, S.F. BUS. TIMES (Oct. 12, 2018), <https://www.bizjournals.com/sanfrancisco/news/2018/10/12/stanford-football-profit-notre-dame-alabama.html>.

5. See generally Steve Berkowitz et al., *NCAA | Finances*, USA TODAY, <http://sports.usatoday.com/ncaa/finances/> (last visited May 9, 2019) (2016-17 Finances).

6. Thom Patterson, *America's Incredibly Expensive College Football Stadiums*, CNN (Sept. 28, 2018), <https://www.cnn.com/2018/09/28/us/expensive-college-football-stadiums/index.html>.

II. COLLEGE ATHLETICS FINANCIAL DATA SOURCES

Publicly-available datasets on the finances of individual collegiate athletic departments, though limited in scope, can be readily obtained.⁷ While multiple outlets provide data, only two common sources of such data exist: the data collected through the EADA surveys and individual institution data collected from the NCAA Membership Financial Reporting System (MFRS), which contains data from the Operating and Capital Financial Data Report submitted annually by each NCAA member. These data are then aggregated by various sources that make the data more readily accessible to the general public. Currently, the main sources are:

- The Equity-in-Athletics Disclosure Act (EADA) database⁸ covers the years 2003-04 to the most recent reported year and is updated annually. EADA provides data by institution, sport, and year. These data are discussed in detail *infra*. Customized reports based on user-determined criteria can also be generated using the EADA Data Analysis Cutting Tool.
- The *USA Today* NCAA Finances database⁹ relies on public records of NCAA MFRS reports submitted by public universities. Data detailing the main components of athletic revenues and expenses are provided by institution and year. No sport-specific breakdowns are provided. In addition, *USA Today* also provides separate datasets containing head coach and assistant coach salary information for NCAA Football Bowl Subdivision (FBS) members.
- The Knight Commission on Intercollegiate Athletics (KCIA) Athletic & Academic Spending Database for NCAA Division I¹⁰ also relies on the NCAA data collected and aggregated by *USA Today* as well as the EADA database. It does not provide revenue information, though it offers a detailed breakdown of athletics expenses as well as several calculated ratios. Among these fields, it provides debt service payment and total athletic

7. The NCAA also provides data aggregated at the Division I, II, and III levels on its site. See *Finances of Intercollegiate Athletics*, NCAA, <http://www.ncaa.org/about/resources/research/finances-intercollegiate-athletics> (last visited May 9, 2019).

8. *Equity in Athletics*, EQUITY IN ATHLETICS DATA ANALYSIS (EADA), <https://ope.ed.gov/athletics> (last visited May 9, 2019).

9. Berkowitz et al., *supra* note 5.

10. See *College Athletics Financial Information Database*, KNIGHT COMMISSION, <http://spendingdatabase.knightcommission.org/> (last visited May 9, 2019).

debt data by institution and year, as well as football-specific expenses.¹¹

- The Chronicle of Higher Education/*Huffington Post* (CHE/HP) database¹² is limited to years 2010-2014 and relies on individual NCAA MFRS reports that member institutions prepare annually and compiles these data into an individual Microsoft Excel file that can be freely downloaded. A key advantage of CHE/HP is that the researchers have also provided links to download the individual institution reports in PDF format for the available years.¹³ As with other publicly available NCAA reports, these only cover public institutions. While the CHE/HP data also include conference affiliations, researchers should note that institutions in these data “were grouped by conference according to their 2013-2014 men’s basketball conference memberships.”¹⁴ Thus, these data do not reflect potential conference changes resulting from realignment during this period.
- The *IndyStar* NCAA Financial Reports Database¹⁵ also relies on forms required by the NCAA. The authors have called it “the most detailed, publicly available database of college athletic department financial information ever assembled.”¹⁶ While the level of detail in this dataset significantly exceeds that available in other readily-accessible public sources of NCAA member financials, the data are, unfortunately, limited to one year, 2004-05, and only 164 institutions. While these

11. One advantage of the KCIA data is its handling of excess athletic department transfers to the institution. In 2014-2015, the NCAA modified its reporting of such data. The KCIA database notes that “[t]ransfers reported in prior fiscal years have been recalculated in this database to align with the current reporting and calculation standards.” See *About the Data*, KNIGHT COMMISSION, <http://spendingdatabase.knightcommission.org/about-the-data> (last visited May 9, 2019).

12. Brad Wolverton et al., *The \$10-Billion Sports Tab – How Colleges Are Funding the Athletics Arms Race*, CHRON. OF HIGHER EDUC. (Nov. 15, 2015), https://www.chronicle.com/interactives/ncaa-subsidies-main#id=table_2014 (citing the Interactive Table: Who Foots the Bill in College Sports?).

13. Individual NCAA reports for the institutions and years included in the CHE/HP database can be downloaded from the Chronicle of Higher Education’s site on Amazon Web Services (AWS). The address used is: https://chronicle.s3.amazonaws.com/D1/ncaa_subsidies/<file name>. The file names for each institution and each year appear in the column titled URL in the CHE/HP database (column I).

14. Brad Wolverton et al., *supra* note 12.

15. See *NCAA Financial Reports Database*, INDYSTAR, https://web.archive.org/web/20100724105417/http://www2.indystar.com:80/NCAA_financial_reports/ (last visited May 9, 2019).

16. *Id.*

data are apparently no longer accessible on the *IndyStar* site, University of Michigan sports economics professor Rodney Fort has archived these data on his Sports Business Data site.¹⁷

- The ESPN College Athletics Revenues and Expenses, 2008¹⁸ contains information also obtained from the detailed financial disclosure forms members submit annually to the NCAA. As the title indicates, the information only covers the fiscal year 2008. ESPN requested data from all 120 institutions who were members of the NCAA FBS in that year. Because private institutions declined to provide the information, ESPN relied on EADA data to fill in total revenues and expenses in those cases. However, because NCAA reports were not available for private NCAA members, revenue and expense breakdowns could not be provided for those institutions.

The usefulness of these data depend on the research aims of the individual(s) relying on them and an understanding of the advantages and limitations of these datasets. To assist researchers in evaluating the congruity of their research aims with the available college athletics financial data, this Article has three aims: (1) to detail relevant characteristics of EADA and NCAA data; (2) to investigate the reliability of EADA and evidence of data errors therein; and (3) to analyze differences between datasets both at the institutional-year and aggregate levels. The ultimate goal of this Article is to offer researchers some measure of the reliability of available college athletics financial data, particularly that available in the EADA database. First, I address the NCAA MFRS, on which the majority of other data sources rely, then the EADA data, which is the only publicly-available college athletics financial database that covers both private and public institutions.

A. The NCAA MFRS Data

Presently, the NCAA's MFRS database likely provides the most extensive coverage of the athletic department financials of member institutions. However, its key weakness lies in its limited availability. While individual reports for

17. The data can be downloaded from Professor Fort's site at the University of Michigan at the address. See Rodney Douglas Fort, *RodsSportsBusinessData*, U. OF MICH. BOX (Jan. 14, 2019), <https://umich.app.box.com/s/41707f0b2619c0107b8b/folder/47631260991>. Prof. Fort's site also provides access to individual member NCAA reports as well as other NCAA member financial data that researchers will likely find useful.

18. See *College Athletics Revenues and Expenses – 2008*, ESPN, <http://www.espn.com/college-sports/revenue?page=1> [<http://www.kashefmajid.com/wp-content/uploads/2014/05/College-Athletics-Revenues-and-Expenses-ESPN.pdf>] (last visited May 9, 2019).

public institutions can be obtained through public records requests or on university web sites, these are generally provided in portable document format (PDF), not as an electronic dataset. As such, parties wishing to aggregate institutional data from these reports must expend significant time and resources re-creating a database that the NCAA has already collected, ostensibly verified, and analyzed.¹⁹ As a result, with the exception of the 2004 *IndyStar* dataset, the commonly-available sources that rely on the NCAA data, including *USA Today*, ESPN, and CHE/HP, only report a fraction of the data fields contained in the individual reports.

An additional shortcoming of data gathered in this fashion is that private institutions are not required to respond to such requests, so data collected from individual institutions' financial submissions to the NCAA generally do not include private colleges and universities. This fact represents a significant limiting factor in aggregating revenues and expenses at the conference or division level to compare with EADA or NCAA totals. This is because private institutions, such as Boston College, Duke, Stanford, Vanderbilt, etc. comprise approximately 35% of NCAA Division I members. Of the main college financial data sources listed *supra*, only the EADA database includes private institutions. Further, public colleges in the state of Pennsylvania are not subject to public records laws, so data from these institutions may also be limited.

In each annually-submitted NCAA Operating and Capital Financial Data Report, institutions report revenues and expenses organized into nineteen and twenty-two individual categories, respectively.²⁰ Pursuant to NCAA bylaws, the MFRS data are verified by an independent accountant,²¹ certified by the

19. Though the NCAA does not make these member-level detailed data available, Rep. David Price (D-NC) has introduced H.R. 5110, named the "'Standardization of Collegiate Oversight of Revenues and Expenditures Act' or the 'SCORE Act.'" *See* Score Act, H.R. 5110, 115th Cong. (2018), <https://www.congress.gov/bill/115th-congress/house-bill/5110/text>. If passed, the act would "amend the Higher Education Act of 1965 to require institutions of higher education to report revenue generated by each sports team, and for other purposes . . . to the Committee on Education and the Workforce." This bill was referred to the House Committee on Education and the Workforce in February 2018. *Id.*

20. For a detailed breakdown of these revenue and expense categories, as of 2013, *see infra* note 21. The NCAA adds additional revenue and/or expense categories to its annual reporting requirement as needed.

21. For an example of such an independent auditor report, see U. OF TEX. SYS. AUDIT OFF., U. OF TEX. AT EL PASO DEP'T OF INTERCOLLEGIATE ATHLETICS: INDEPENDENT AUDITOR'S REPORT ON THE APPLICATION OF AGREED-UPON PROCEDURES FOR THE FISCAL YEAR ENDED AUGUST 31, 2017 (2018). In this case, the audit was performed by the state university system. The NCAA's Agreed-Upon Procedures permit:

[A]n individual employed by the state (or by a state university system) to perform audits for that state's colleges and universities (or for the colleges and universities within a state university system) is considered to be an independent accountant, provided the individual is not a regular employee of the institution.

institution's Chancellor, and subsequently examined by the NCAA's data research team. While the database that contains institution-level data is not publicly available, the NCAA provides summaries at the Division level through financial reports.²² These summaries have historically been prepared jointly by NCAA research staff and Professor Daniel Fulks²³ of the University of Kentucky. Several issues of these annual reports note that the data used "were collected via a questionnaire survey conducted in connection with data collection mandated by the federal Equity in Athletics Disclosure Act (EADA), the result of which is very high usable response rates."²⁴ I discuss these reports subsequently.

1. The NCAA MFRS/Fulks Reports

The NCAA reports the aggregate financial performance of its Division I members in its annual Revenues and Expenses report, the latest iteration of which is the NCAA Revenues/Expenses Division I Report 2004–16.²⁵ At the *Nat'l Collegiate Athletic Ass'n Grant-in-Aid Cap Litig.* trial in September 2018, the NCAA's Todd Petr explained the creation of the report as follows:

This report was – is created, first of all, we take the data we've been talking about, the MFRS data, do our data checks and reviews on it. The report itself has been structured in a way that was guided by Dr. Fulks. My staff does the first pass at analyzing the data and putting it into tables in a way that Dr. Fulks wants to see them. Then all the data is run by him for his review and analysis of findings and trends, and those sorts of things.²⁶

NAT'L COLLEGIATE ATHLETIC ASS'N, 2018 AGREED-UPON PROCEDURES, at 8-9 (2018), https://www.ncaa.org/sites/default/files/2018NCAAFIN_Agreed_Upon_Procedures_20180525.pdf (the specific requirements of independent accountants are set forth in the NCAA's Agreed Upon Procedures, which is published annually).

22. See *NCAA Membership Financial Reporting System*, NCAA, <http://www.ncaa.org/about/resources/finances/ncaa-membership-financial-reporting-system> (last visited May 9, 2019).

23. In the *In re Nat'l Collegiate Athletic Ass'n Grant-In-Aid Cap Antitrust Litig.*, the NCAA's Todd Petr testified that the organization provides its data to an outside consultant, Dr. David Fulks, for further analysis. See Reporter's Transcript of Proceedings, *In re NCAA Grant-In-Aid Cap Antitrust Litig.*, No. 14-MD-2541 CW, at 1842 (N.D. Cal. 2018).

24. See, e.g., DANIEL L. FULKS, 2004-08 NCAA REVENUES AND EXPENSES OF DIVISION I INTERCOLLEGIATE ATHLETIC PROGRAMS REPORT 10 (2009).

25. See, e.g., DANIEL L. FULKS, 2004-16 NCAA REVENUES AND EXPENSES OF NCAA DIVISION I INTERCOLLEGIATE ATHLETICS PROGRAMS REPORT (2017).

26. Reporter's Transcript of Proceedings, *supra* note 23, at 1842-43.

The report at issue contains summary statistics for member institutions aggregated at the following group levels: FBS, the Power-5 conferences, non-Power-5 conference members, Football Championship Subdivision (FCS), and NCAA D-I without football. Neither individual institution nor individual conference breakdowns are provided. Rather, the 2017 NCAA/Fulks report refers readers to the U.S. Department of Education to obtain EADA data at the institutional level.²⁷ Within these NCAA D-I subgroups, financial metrics (almost exclusively median values) such as generated revenues, expenses, excess generated revenues over expenses (profits), and coach compensation are also provided by sport over the last three years as well as for the initial year of 2004.²⁸

These NCAA reports suffer from significant limitations, some of which are openly acknowledged in the report. First, and rather surprising for a report titled *Revenues and Expenses*, total revenues and expenses are not provided either for NCAA D-I or its subdivisions. Neither are average (mean) figures, which, if provided, could be multiplied by counts to calculate totals. As the NCAA and Dr. Fulks note, “[t]he reported numbers consist almost entirely of medians and frequency distributions of means for the respective subdivisions.”²⁹ The change from reporting means to reporting medians occurred in 2008, with the reason given that “the impact that unusually large (outlier) revenue items, primarily alumni and booster contributions, have had on average amounts in recent years.”³⁰

Unfortunately, the decision to report only medians significantly limits the information about college athletics finances that can be gleaned from these reports. As the NCAA acknowledges, “[t]he caveat is that median data also can be misleading . . . [u]nlike average data, medians are not additive. Thus, tables including ‘total’ values may be confusing.”³¹ Three major problems immediately present themselves. First, as observed, medians cannot be added together or multiplied by their respective counts to obtain totals. Totals are related to the mean, not to the median. As such, the NCAA reports offer little to no insight into the growth in total revenues, expenses, or what individual sub-categories may be driving those changes. Second, by presenting only the median and not the mean, the report obscures any evidence of such outlier values and what their effects may be on the distribution of revenues, expenses, or other variables. As the Reference Manual on Scientific Evidence observes,

27. FULKS, *supra* note 24, at 7.

28. Reporter’s Transcript of Proceedings, *supra* note 23, at 1846-50.

29. FULKS, *supra* note 25, at 7.

30. *Id.* at 6.

31. *Id.*

“[w]hen the distribution is symmetric, the mean equals the median. The values diverge, however, when the distribution is asymmetric, or skewed.”³² The nearly exclusive use of the median in NCAA revenue and expense reports does not permit a comparison between medians and means that can illuminate the existence of such skewness.

Third, and perhaps most important, describing the use of the mean vs. the median as a technical choice, “puts the cart before the horse.”³³ As statistician D.A. Freedman notes, “[t]o decide what statistical operation should be done on the data, we need to have the objectives defined,” and with respect to their use in litigation, “[t]he standard is not to be elicited from technical properties of various statistics, or from the data, but from the law.”³⁴ In this particular case, the law does not address what measure of central tendency, mean, media, or mode the NCAA should use in its revenue and expense report. In the absence of legal guidance, the stated objectives of these reports, which have remained relatively constant over time, can offer some assistance. The most recent report states three objectives: (1) “The primary objective of the 2017 edition of this report is to update the information in previous reports”; (2) “An additional objective is to provide a basis for analysis of the revenue and expense trends of athletics programs within each of the respective Division I subdivisions”; (3) “A final objective of the report is to provide data relevant to gender issues.”³⁵

Of these stated objectives, only the second appears relevant to an analysis of college athletic department finances. The first and third objectives do not address this issue at all, one focusing on updating previous reports that also rely on median values, and the third offering the rather vague goal of providing “data relevant to gender issues.”³⁶ However, tables consisting almost exclusively of median values that are admittedly confusing serve the second objective to a limited degree, particularly when the calculation is made across a broad and diverse group of institutions. While trends in median values are informative and commonly used, median home values and median wages being two notable examples, the median in this case obscures differences between institutions even when one only considers the FBS group. While, as the report acknowledges “haves and have-nots” exist within the NCAA D-I, a large variance in revenues

32. FED. JUDICIAL CTR., REFERENCE MANUAL ON SCIENTIFIC EVIDENCE 238 n.69 (National Academies Press 3d ed. 2011) (also noting that “[t]he mean takes account of all the data—it involves the total of all the numbers; however, particularly with small datasets, a few unusually large or small observations may have too much influence on the mean. The median is resistant to such outliers.” *Id.* at 238).

33. D.A. Freedman, *The Mean Versus the Median: A Case Study in 4-R Act Litigation*, 3 J. BUS. & ECON. STAT. 1, 2 (Jan. 1985).

34. *Id.*

35. FULKS, *supra* note 25, at 106.

36. *Id.*

also exists among the FBS “haves.” Based on EADA data, the top-earning FBS athletic department was that of the University of Texas, with \$207 million in revenues, while the lowest belonged to the University of Louisiana-Monroe with \$14 million. The median value among FBS schools may be \$71 million, but this figure does little to inform the revenue disparity that exists among schools at this level.

As such, the tables in the NCAA reports appear mostly intended to allow a single institution to compare its own results on individual criteria to the corresponding median in their respective subdivision, not to illuminate revenue and expense trends or examine variation among institutions. For these purposes, which are often of interest to researchers, the EADA data are far better suited than the NCAA reports. For instance, based on EADA data, the NCAA D-I schools identified as FBS members in 2017, when examined over time, show a total real revenue growth (inflation-adjusted to 2016 dollars) from \$4.8 billion to \$9.0 billion, a compound annual growth rate of 5.0%.³⁷ Longitudinal analysis indicates that, even during the period following the Great Recession, annual real revenue growth did not fall below 3.1%. Currently, such analysis that includes both public and private institutions is only possible using the EADA data, which is discussed next.

B. The EADA Data

Data gathered by the U.S. Department of Education pursuant to the Equity in Athletics Disclosure Act consists of two sources: an annual report and an annual survey. The EADA Report, officially called *The Report on Athletic Program Participation Rates and Financial Support Data*,³⁸ must be published and made publicly-available³⁹ by October 15 of each year by “any coeducational institution of higher education that participates in Title IV, the federal student aid program, and has an intercollegiate athletics program”⁴⁰ At this time,

37. For this analysis, the same group of institutions identified as members of NCAA D-I FBS in the 2016-17 EADA data were examined over time.

38. Postsecondary institutions generally make these reports available either online in portable document format (PDF) or in hard copy format from the athletic department or the Office of Student Affairs. For example, see the 2017 report prepared by Eastern Florida State College. *See, e.g.*, E. FLA. STATE COLL., REPORT ON ATHLETIC PROGRAM PARTICIPATION RATES AND FINANCIAL SUPPORT DATA (2017), <http://www.easternflorida.edu/documents/eada-report-efsc2017.pdf>.

39. Report on Athletic Program Participation Rates and Financial Support Data, 34 C.F.R. § 668.47 (2019).

40. U.S. DEP’T OF EDUC. – OFFICE OF POSTSECONDARY EDUC., USER’S GUIDE FOR THE EQUITY IN ATHLETICS DISCLOSURE ACT WEB-BASED DATA COLLECTION 1 (2018), https://surveys.ope.ed.gov/athletics/images/Instructions/2018_EADA_user_s_Guide.pdf.

these represent the only database on college athletic financial performance made available to the public.

In addition to institutional information such as name, number of undergraduate students, and athletic classification, the EADA survey provides annual data on several key metrics: athletic revenues by team; athletic expenses by team; athletic participation by team; coaching salaries across all teams; and athletic aid expenditures across all teams by gender. While EADA data do not provide conference affiliation information, the survey data contain each institution's Integrated Postsecondary Education Data System (IPEDS) 'Unit ID' variable, which uniquely identifies an institution and permits cross-referencing with the significantly larger IPEDS database collected annually by the U.S. Department of Education.⁴¹ Conference affiliation can be obtained by merging the EADA data with the institutional demographic table from IPEDS by Unit ID and academic year. Instances where conference affiliation may differ by sport are discussed subsequently. Of the data sources listed previously, the CHE/HP, Knight Commission, and *IndyStar* data also include the IPEDS Unit ID for each institution. Unfortunately, the *USA Today* data do not. Merging *USA Today* data with other sources is further complicated by the fact that institution names are not consistent across datasets (e.g. Texas vs. The University of Texas-Austin). For comparisons made in this Article, I created a crosswalk file⁴² to attach the Unit ID field to the *USA Today* data.

Within fifteen days of making the report available to the public, institutions must also submit their data to the Secretary of Education via the EADA web-based data collection tool. This online submission is called the *EADA Survey*. These survey data are then collected and ported to the Office of Postsecondary Education (OPE) site at the aforementioned web address. From this location, interested members of the public may view individual institution data, create various reports, or download the raw data itself in Excel format. Research findings based on EADA data commonly refer to the downloadable data from the EADA survey. Currently, these data cover the academic years 2000-01 through 2016-17.⁴³ For parties interested in an easily-accessible panel dataset to perform both cross-sectional and longitudinal analysis, the full data

41. For example, the six-figure IPEDS Unit ID for Duke University, 198419, appears immediately after the institution's name in the EADA survey form.

42. A crosswalk file enables mapping from one database table to another by matching elements in both tables. Crosswalk files are commonly used, for example, to match U.S. Postal Service zip codes to U.S. Census tracts.

43. EADA data have been collected and those relying on EADA data should note that the field "survey year" refers to the beginning of the academic year, while the year field in other datasets often refers to the end of the year. So, for the 2009-2010 academic year, EADA would show 2009 as the survey year, but *USA Today*, for example, would show 2010 in the year field.

beginning in 2003-04 through the most currently available year can be downloaded as a single comma-delimited file from the EADA site. Individually-tailored data extracts can be obtained through the Data Cutting Tool.

While EADA data were collected prior to 2000, a 2007 U.S. General Accountability Office (GAO) report titled *Intercollegiate Athletics – Recent Trends in Teams and Participants in National Collegiate Association Sports* observed that “[e]ducation now collects and stores athletic team and participant data via the Equity in Athletics Disclosure Act (EADA), but Education does not have these data for before the 2000-2001 school year.”⁴⁴ However, as noted previously, the downloadable dataset begins with the 2003-04 academic year. One key reason for this is because 2003-04 represented the first year when the EADA survey asked institutions to report the unduplicated number of athletes by gender, making comparisons with previous years potentially inaccurate.

Because the athletic department revenues and expenses often represent variables of interest to researchers relying on these data, these merit special attention in this discussion. Perhaps the most important fact about these data, of which researchers interested in financial analysis should be aware, is that the EADA survey is not an accounting report.⁴⁵ For purposes of this survey, reported revenues must always equal or exceed reported expenses, otherwise the survey cannot be finalized, or “locked out” in the system.

The revenues in the EADA survey data represent all institutional revenues from intercollegiate athletics,⁴⁶ including:

revenues from appearance guarantees and options, an athletic conference, tournament or bowl games, concessions, contributions from alumni and others, institutional support, program advertising and sales, radio and television, royalties, signage and other sponsorships, sports camps, state or other government support, student activity fees, ticket and luxury box sales, and any other revenues attributable to intercollegiate athletic activities.⁴⁷

However, the data do not separate allocated revenues (e.g., institutional support, government support, and student athletic fees) and earned revenue (e.g., appearance guarantees, ticket sales, alumni contributions, etc.) from the total revenue figure. EADA offers the alternative definition of revenues as “any

44. U.S. GOV'T ACCOUNTABILITY OFF., GAO 07-535, INTERCOLLEGIATE ATHLETICS: RECENT TRENDS IN TEAMS AND PARTICIPANTS IN NATIONAL COLLEGIATE ASSOCIATION SPORTS 28 (2007).

45. U.S. DEP'T OF EDUC. – OFFICE OF POSTSECONDARY EDUC., *supra* note 40, at 71.

46. *Id.* at 2.

47. *Id.* at 71.

funds used to pay for team expenses.”⁴⁸ Thus, it is perhaps no surprise that, in many instances, the total reported revenues exactly equal the total reported expenses for an institution in a given year. Because these data do not separate allocated and earned revenues, researchers generally cannot rely on EADA survey data alone to determine instances where individual athletic department earned revenues (excluding institutional aid) exceeded expenses, rendering the department ostensibly “profitable.” Often, such institutional support is used to cover the shortfall between earned athletic revenues and athletic expenses, when the latter exceeds the former, as it does at many institutions. As explained, allocated revenue data are available from other sources.

A brief word of caution is warranted to forestall potential confusion regarding institutional reporting of allocated and earned revenues. The EADA data do contain two fields for revenues and expenses not allocated by gender or sport. These figures should not be confused with the distinction between allocated and earned revenues. As the 2018 EADA Survey User’s Guide notes: “Revenues Not Allocated by Gender/Sport: include revenues not attributable to a particular sport or sports. *These funds can be earned revenue or institutional support.*”⁴⁹ EADA expenses not allocated by gender or sport are those not attributable to a specific sport and can include athletic director, trainer, and support staff salaries, general and administrative costs, and so forth.⁵⁰

1. EADA Data Advantages

The EADA survey offers several advantages for researchers. EADA data are publicly accessible for download and analysis and cover all co-educational post-secondary institutions with intercollegiate athletic programs. Private universities must also complete this survey and make the data available to the public. This characteristic differentiates the EADA database from other sources where private institution data are not publicly available. Second, EADA data provide a breakdown of revenues, expenses, and participation figures by sport for both “head-count” and “equivalence” sports.⁵¹ At this time, no other

48. *Id.* at 73.

49. *Id.* at 74 (emphasis added).

50. *Id.* at 67.

51. Head count scholarship sports refer to NCAA sports where the number of athletes who can be on a scholarship is restricted and coaches cannot divide these scholarships to offer them to more athletes beyond the imposed limit (eight-five for football and thirteen for basketball). For equivalence scholarship sports, no limit exists on the number of athletes that can receive a scholarship, but there is a limit on the number of scholarship dollars. That fixed pool of scholarship funds is distributed among athletes in various proportions. For some athletes, the scholarship money they receive may represent a 20% scholarship, 50%, or even a 100% scholarship. For details, see David Frank, *Head Count Sports vs. Equivalency Sports: Which One Do You*

readily-available data source provides such detailed longitudinal information by sport.

Another significant advantage that EADA data offer lies in the number of institutions reporting. Because EADA covers all co-educational institutions with an athletic program, the data cover institutions in various intercollegiate athletic divisions, including: NCAA DI-III (with & without football); National Association of Intercollegiate Athletics (NAIA) Divisions I-III; National Junior College Athletic Association (NJCAA) Divisions I-III; National Community College Athletic Association (NCCAA) Divisions I-II; Northwest Athletic Conference (NWAC); Independents; and others.⁵² EADA data also differentiates between DI NCAA members who participate in the Football Bowl Series (FBS), Football Championship Series (FCS), DI-A, DI-AA, and DI-AAA.⁵³

EADA data have also been relied upon extensively in public literature. These data have been used in the GAO's December 2000 report, *Gender Equity – Men's and Women's Participation in Higher Education*,⁵⁴ and have been used by the U.S. Department of Education in its report to Congress on gender equity in intercollegiate athletics.⁵⁵ In addition, the 2003 report commissioned by the NCAA, *The Empirical Effects of Collegiate Athletics: An Interim Report*, relied on the EADA data and noted:

The purpose of this paper is to examine empirically the effects of college athletics, with a particular focus on the financial effects. In particular, the paper draws on evidence contained in previous academic studies; statistical analysis of a new, comprehensive database compiled from school-specific information collected as part of the Equity in Athletics Disclosure Act (EADA) merged with data from other sources (such as the Integrated Post-Secondary Education Data System managed by the Department of Education).⁵⁶

Academic scholarship has also made use of data gathered through the EADA. Deborah Anderson and others relied on 1995-96 and 2001-02 EADA

Play?, ATHNET, <https://www.athleticscholarships.net/2011/11/30/head-count-sports-equivalency-sports.htm> (last visited May 9, 2019).

52. *Equity in Athletics*, *supra* note 8.

53. *Id.*

54. See generally U.S. GOV'T ACCOUNTABILITY OFF., GAO 01-128, GENDER EQUITY: MEN'S AND WOMEN'S PARTICIPATION IN HIGHER EDUCATION (2000).

55. See generally *Equity in Athletics Disclosure Act Survey, 2013*, U.S. DEP'T OF EDUC. (Nov. 26, 2018), <https://catalog.data.gov/dataset/equity-in-athletics-disclosure-act-survey-2013>.

56. ROBERT LITAN ET AL., THE EMPIRICAL EFFECTS OF COLLEGIATE ATHLETICS: AN INTERIM REPORT 2 (2003) (commissioned by the NCAA).

data for approximately 700 NCAA Division I-III colleges and universities to investigate institutional noncompliance with Title IX, as measured by the “proportionality gap.”⁵⁷ Staurowsky and others used EADA budgetary data for the academic years 2006-07 and 2010-11 to “revisit one of the most highly publicized cases alleging Title IX harmed male athletes at James Madison University (JMU) following a decision that cuts would be made to the athletic program in 2006.”⁵⁸ Using EADA data for 348 NCAA D-I and 316 NCAA D-II institutions, Barbara Osborne recently investigated Title IX scholarship compliance by “comparing the proportion of scholarship dollars spent by gender to the proportion of unduplicated male and female student-athletes at each institution as required by the Title IX regulations.”⁵⁹ Emily S. Sparvero and Stacy Warner examined the relationship between athletic spending and on-field success by drawing on two separate data sources: the EADA database and the Learfield Sports Directors’ Cup Rankings.⁶⁰

EADA data have been used in political research as well. James N. Druckman and other researchers relied on data from the 2015-16 academic year EADA scholarship recruiting expense, coach counts, and overall expense data for the Big Ten Conference and found that:

college student-athletes strongly support the spirit of the [Title IX] policy, with nearly all reporting that there ‘should’ be equity . . . a sizeable and important population also believes mal-distribution exists among resources and opportunities, thinks redistribution is needed, and is willing to take political action to improve equality.⁶¹

In the *Handbook on the Economics of Women in Sports*, Susan L. Averett and Sarah M. Estelle relied on both EADA and IPEDS data for 2009-10 to

57. Deborah J. Anderson et al., *Gender Equity in Intercollegiate Athletics: Determinants of Title IX Compliance*, 77 J. OF HIGHER EDUC. 225, 226 (2006). The proportionality gap is defined as the percentage of undergraduates who are female minus the percentage of athletes who are women at a given institution. *Id.* at 231.

58. Ellen J. Staurowsky et al., *Revisiting James Madison University: A Case Analysis of Program Restructuring Following So Called ‘Title IX’ Cuts*, 6 J. OF INTERCOLLEGIATE SPORT 96, 97 (2013).

59. Barbara Osborne, *Failing to Fund Fairly: Title IX Athletics Scholarships Compliance*, 6 TENN. J. OF RACE, GENDER, & SOC. JUST. 83, 91 (2017).

60. See Emily S. Sparvero & Stacy Warner, *The Price of Winning and the Impact on the NCAA Community*, 6 J. OF INTERCOLLEGIATE SPORT 120, 125 (2013).

61. James N. Druckman et al., *Gender Policy Feedback: Perceptions of Sex Equity, Title IX, and Political Mobilization Among College Athletes*, POL. RES. Q. 1, 7 (2018).

investigate trends in Title IX compliance including whether institutions that achieve compliance remain compliant or revert to noncompliance.⁶²

EADA data have been relied on in legal filings as well. In *O'Bannon v. Nat'l Collegiate Athletic Ass'n*,⁶³ a group of thirty-one Amici Curiae economists and professors of sport management submitted a brief to the U.S. Ninth Circuit Court of Appeals in support of plaintiffs-appellees and in support of affirmance of the District Court's ruling.⁶⁴ The Amici relied on EADA data in presenting the real revenue from Men's Basketball and FBS College Football, as can be observed in Tables Four and Five of their amicus brief.⁶⁵ Plaintiffs' antitrust expert, Roger Noll, also relied on EADA data to prepare a trial demonstrative in *In re Nat'l Collegiate Athletic Ass'n Grant-In-Aid Cap Litig.* detailing NCAA D-I member revenues for football, men's basketball, and women's basketball.⁶⁶

2. EADA Data Shortcomings

Notwithstanding the advantages and widespread use of EADA data, these data also suffer from several shortcomings. These shortcomings can be separated into two categories: typographical errors, and limitations imposed by the nature of data collection. The former include rounding errors, incorrect entries, transposition of data between fields, and other types of data entry issues. Data limitations refer to the restrictions on possible uses of the data resulting from nature of the collection mechanism. I address both shortcomings seriatim.

i. Data Limitations

As noted, the main limitation of EADA data is its failure to separate earned vs. allocated revenues, likely precluding a determination of athletic department profitability based on these data for researchers interested in such a figure. Another restriction on the possible uses of EADA data for research lies in its limited additional breakdown of revenues into component sources, such as ticket sales, contributions, royalty payments, etc. Of course, such shortcomings represent a byproduct of the purpose of data collection under EADA and not an indicator of a lack of data reliability.

62. Susan L. Averett & Sarah M. Estelle, *The Economics of Title IX Compliance in Intercollegiate Athletics*, in HANDBOOK ON THE ECONOMICS OF WOMEN IN SPORT 175 (Eva Marikova Leeds & Michael A. Leeds ed. 2013).

63. 7 F. Supp. 3d 955 (N.D. Cal. 2014), *aff'd in part, vacated in part*, 802 F.3d 1049 (9th Cir. 2015), *cert. denied* 137 S. Ct. 277 (2016).

64. See Brief of Antitrust Scholars as Amici Curiae in Support of Appellees, Supporting Affirmance, *O'Bannon v. Nat'l Collegiate Athletic Ass'n*, No. 09-CV-03329 (9th Cir. 2015).

65. *Id.* at 17.

66. See Reporter's Transcript of Proceedings, *supra* note 23, at 296-97.

Another significant EADA data limitation lies in the reporting of coaching salaries, which only include actual salaries paid not total compensation. As such gender-based comparisons based on these data ignore differences in total compensation, which can be significant. For example, additional compensation for men's coaches, particularly at high profile football and basketball programs, often include substantial benefits in addition to the salaries. Such benefits can include the use of a luxury vehicle, use of private aircraft for non-business purposes, country club memberships, and other perks.⁶⁷

Because institutions have reported data to the U.S. Department of Education under EADA for over two decades, it is important to distinguish current concerns over data reliability from those that existed in prior periods and may subsequently have been concerns. For example, the GAO-07-535 report analyzed college athletic data from 1991-92 through 2004-05.⁶⁸ The report "determined that the NCAA data were the only viable option for analyzing annual athletic trends for teams and participant . . . over an extended period."⁶⁹ Its reasoning was twofold. As previously noted, the U.S. Department of Education did not have participant data available for the period before 2000-01. Further, it observed that "[e]ducation officials expressed some concerns about the reliability of EADA data."⁷⁰

For example, the definition of "reporting year" has varied from school to school, with some schools reporting over an 8 month period, and other schools reporting over different 12 month periods. Education noted that the very first year of data collection (2000-2001) was particularly problematic because submissions varied dramatically from school to school and for other reasons.⁷¹

One should note that these issues were raised concerning data collected during the 1990s and early 2000s. The currently available EADA database appears to have addressed at least some of these concerns. As such, some prior

67. For example, the contract of recently-dismissed former Louisville Football Coach Bobby Petrino included incentives of two cars, a country club membership, a luxury box with eighteen football tickets, and eight men's basketball tickets. See *Bobby Petrino Contract At Louisville*, NEWSDAY, <https://projects.newsday.com/college-football-coaches-salaries-contracts/bobby-petrino/> (last visited May 9, 2019). Texas coach Tom Herman receives twenty hours per year of private jet use, while Oklahoma coach Lincoln Riley receives twenty-five. See Tom Schad & Steve Berkowitz, *College Football: 9 of the Oddest Contract Quirks for Coaches*, USA TODAY, Oct. 25, 2017, <https://www.usatoday.com/story/sports/ncaaf/2017/10/25/9-oddest-contract-quirks-college-football-coaches/791508001/>.

68. U.S. GOV'T ACCOUNTABILITY OFF., *supra* note 44, at 22.

69. *Id.* at 28.

70. *Id.*

71. *Id.* at n.5.

concerns over EADA data reliability no longer appear to be an issue in current longitudinal dataset. For example, at least as early as 2007-08, the EADA guide instructed users that “[y]ou are reporting for a 12-month period You are expected to maintain the same 12-month reporting period from year to year.”⁷² The same instructions appear in the 2018 iteration of the EADA User’s Guide.

John Cheslock’s 2008 report titled *Who’s Playing College Sports* analyzes 1995-96 to 2004-05 EADA data in some detail and compares participation data reported by EADA and NCAA data, observing that “[t]he results for these two data sets tell a similar story.”⁷³ Citing to the Orszag 2003 report, Cheslock notes the inconsistency of accounting standards schools use to report EADA data, though also adding that, “[d]espite all these flaws, the athletic expenditure data reported under the EADA are still the best publicly available source of information on intercollegiate athletic expenditures. Such information is vital, because policymakers do not currently have answers to even the most basic questions in this area.”⁷⁴

Notwithstanding its limitations, the EADA database offers ready access to longitudinal data that can be used to examine revenue and expense trends. Further, it allows researchers to examine institutional sports offered, roster sizes, athletic aid offered, and coaching staff sizes.⁷⁵ The consistency of these financial metrics with NCAA data at the individual institution and aggregate level is examined *infra*. Until NCAA or similar data are made publicly-available, the most effective application of the EADA database for financial research purposes is likely in conjunction with other available data that can fill in analytical gaps and address some limitations, particularly EADA’s lack of a breakdown between earned and allocated revenues.

ii. Data Entry Errors

Evidence of typographical errors in EADA data has been previously documented.⁷⁶ A 2005 *USA Today* investigation found that:

Of the nation’s highest-profile athletic programs, more than 34% [41 of 119 NCAA D-I schools] had at least one error in

72. U.S. DEP’T OF EDUC. – OFFICE OF POSTSECONDARY EDUC., USER’S GUIDE FOR THE EQUITY IN ATHLETICS DISCLOSURE ACT WEB-BASED DATA COLLECTION 5 (2007), <https://docplayer.net/10662886-User-s-guide-for-the-equity-in-athletics-act-web-based-data-collection.html>.

73. JOHN CHESLOCK, WHO’S PLAYING COLLEGE SPORTS? MONEY, RACE AND GENDER 8 (2008).

74. *Id.* at 14.

75. For additional details, see THE UNIVERSITY OF NORTH CAROLINA, FINAL REPORT OF THE ATHLETICS FINANCIAL TRANSPARENCY WORKING GROUP APPENDIX I (2014).

76. See, e.g., Lucy M. Caldwell, *Title IX Finances Aren’t Adding Up*, HARV. CRIMSON (Oct. 25, 2005), <https://www.thecrimson.com/article/2005/10/25/title-ix-finances-arent-adding-up/>.

the 2003 and 2004 revenue and expense figures kept by the Department of Education under the Equity in Athletics Disclosure Act (EADA). The errors range from just a few dollars to a \$34 million data-entry mistake in the University of Texas report.⁷⁷

The data entry mistake in the Texas report noted above appears to have been addressed. The most recent download of EADA data for the University of Texas at Austin shows no apparent evidence of such an error.

Table 1. Univ. of Texas-Austin Athletic Revenues and Expenses⁷⁸

Survey Year	Grand Total Revenue	Grand Total Expenses
2003	\$83,474,135	\$70,602,483
2004	\$89,651,683	\$74,435,447
2005	\$97,756,777	\$83,600,249
2006	\$105,048,632	\$89,313,533
2007	\$120,288,370	\$100,982,596
2008	\$138,459,149	\$112,935,132
2009	\$143,555,354	\$113,952,320
2010	\$150,295,932	\$125,978,117
2011	\$163,295,114	\$129,234,974
2012	\$165,691,486	\$138,205,604
2013	\$161,035,184	\$145,984,816
2014	\$179,555,311	\$152,853,239
2015	\$182,104,126	\$155,282,073
2016	\$207,127,309	\$182,898,924

Indeed, a main criticism of the EADA data has been the lack of an error-checking mechanism. A contributing factor to the existence of potential typographical errors is the reporting date. As previously noted, the submission deadline for EADA data is October 15, leaving institutions whose fiscal years end on August 31 (e.g., Northwestern University) little time for data quality control. Fiscal years at some institutions (e.g., Duke University.) end on June 30, allowing more time for such controls before EADA entry and potentially

77. Jodi Upton & Eric Brady, *Errors Mar Equity Reports*, USA TODAY, Oct. 19, 2005, https://usatoday30.usatoday.com/sports/college/2005-10-18-equity-reports-cover_x.htm.

78. Note that "Survey Year" reflects the beginning of the academic year (e.g., 2016 Survey Year is the 2016-17 academic year).

contributing to data accuracy differences among reporting institutions. Further, while the NCAA's MFRS requires the university's Chief Executive Officer (CEO) to review and approve the submission,⁷⁹ no such requirement covers the submission of EADA survey data. Nonetheless, it should be noted that typographical errors have also been found in the NCAA data. The 2007 GAO report on intercollegiate athletics analyzed the NCAA's 1981-82 to 2004-05 Sports Sponsorship and Participation Rates Report, noting that "[w]here internal inconsistency or large and unexplained fluctuations (e.g., apparent numerical typographical errors) were found, we determined, in concert with NCAA officials, whether and how to correct those data to resolve those inconsistencies."⁸⁰

The existence of some typographical errors is to be expected given databases of EADA and NCAA's size and the fact that a myriad of sources contribute to its compilation. In 2016-17, 2,067 institutions submitted EADA survey data. The questions of particular interest are: (1) which fields are affected; (2) can the data be corrected; and (3) are the errors de minimis? For example, in the 2004-05 survey, the University of Miami's figures for men's and women's assistant coach salaries were clearly transposed with the corresponding coach count figures, as observed in Table 2. These represent errors that researchers encounter on a regular basis when dealing with data and can be readily corrected, just as the NCAA corrects data submitted by its members.⁸¹

79. NCAA regulations require that an independent public accountant review a submitting institution's revenues and expenses. See NCAA, 2018-19 NCAA DIVISION I MANUAL art. 3, 3.2.4.15.1, at 10 (Aug. 1, 2018). After verification by the accountant, the final report is to be submitted to the institution's CEO for review and certification prior to submission to the NCAA. *Id.* In addition, the NCAA's MFRS also offers a "Presidential View" of the NCAA Financial Dashboard where administrators may review the institution's athletics data. *Id.*

80. U.S. GOV'T ACCOUNTABILITY OFF., *supra* note 44, at 30.

81. Of course, care should be taken when addressing such data errors to ensure that corrections are not made subjectively. See, e.g., *Revlon Consumer Prods. Corp. v. Jennifer Leather Broadway, Inc.*, 858 F. Supp. 1268, 1276 (S.D.N.Y. 1994). The court found that the survey expert's coding was "too subjective" and noted flagrant examples of "mis-scorings." *Id.* at 1273, 1276. As a result, the court found that the "survey is so unreliable that it is entitled to no weight . . ." *Id.* at 1276.

Table 2: EADA Data Entry Error Examples – Univ. of Miami (FL)⁸²

Survey Year	Men's Team Average Annual Institutional Salary per Assistant Coach	Men's Team Number of Assistant Coaches Included in Average	Women's Team Average Annual Institutional Salary per Assistant Coach	Women's Team Number of Assistant Coaches Included in Average
2003	\$106,072	16	\$39,947	13
2004	18	\$117,726	13	\$48,790
2005	\$140,016	20	\$55,520	14
2006	\$104,174	20	\$36,985	15
2007	\$130,037	18	\$42,088	15
2008	\$131,985	19	\$41,253	15
2009	\$153,619	19	\$50,551	15
2010	\$150,899	21	\$39,078	16
2011	\$157,679	21	\$48,532	16
2012	\$159,680	23	\$49,295	16
2013	\$169,452	23	\$52,409	16
2014	\$286,157	20	\$78,354	17
2015	\$355,594	20	\$82,603	17
2016	\$351,847	20	\$84,595	17

Other examples of typographical errors in the EADA data include the entries for men (36) and women (75) athletes for the University of Oklahoma for the 2005-2006 academic year. These figures are clearly incorrect. Not only did Oklahoma show 289 and 199 women athletes in the previous year, but also these entries for 2005-06 are inconsistent with the Oklahoma athletics annual report.⁸³ Further, these figures can be cross-checked against the KCIA data. The KCIA and EADA match with respect to the total number of athletes in 2005-06 (488), but KCIA reports a total of 493 athletes in 2006-07. Thus, we can observe that, even when typographical errors exist, the research may be able

82. *Equity in Athletics*, *supra* note 8.

83. THE UNIVERSITY OF OKLAHOMA DEPARTMENT OF ATHLETICS, 2006-07 ANNUAL REPORT (2007). Archived EADA and annual reports are available at *Documents and Reports*, U. OKLA. ATHLETICS, http://www.soonersports.com/ViewArticle.dbml?DB_OEM_ID=31000&ATCLID=208803525 (last visited May 9, 2019).

to easily correct these errors by examining the data and leveraging other available data sources.

Section III of this Article systematically investigates the prevalence of apparent typographical errors among EADA financial information data in detail. I analyzed the data for NCAA D-I programs over the period from 2004-05 through 2016-17. I focused primarily on financial data for two principal reasons: (1) to avoid overwhelming the reader with myriad data comparisons, and (2) because EADA financial data have been the focus of concern with respect to accuracy. Specifically, this examination of variables includes the following categories: total revenues; men's and women's basketball revenues and expenses; men's football revenues and expenses; total expenses; scholarship expenses for men's and women's sports; total head coaching salaries; and total unduplicated participation in men's and women's sports. This investigation into potential data errors follows the same procedure used in the 2007 GAO report on intercollegiate athletics, which identified apparent numerical or typographical errors by examining "year-to-year fluctuations in the athletic data for each sport and in aggregate."⁸⁴ Each year's data are compared to the previous year.

III. EADA DATA RELIABILITY AND INTER-DATABASE AGREEMENT

This section (1) investigates the reliability of the EADA data for potential use in research and/or litigation by analyzing the prevalence of any apparent typographical errors among key variables; (2) the degree to which data sources that rely on the NCAA MFRS differ from corresponding EADA data at the institutional and conference level; and (3) the agreement between data summaries obtained from the NCAA Revenue and Expense Report for 2004-16 and aggregate figures obtained from EADA data. The ability to rely on EADA data to analyze general financial performance among college athletic programs, athletic scholarship funding, or participation rates by gender is of particular interest for two primary reasons. First, as previously noted, such data have been relied upon extensively in research, policy-making, and litigation. Second, given the NCAA's decision not to make the MFRS data publicly-available, the EADA database appears to offer the best option for such analysis.

A. General Differences Between EADA and the NCAA's MFRS

Reliance on EADA data in litigation and research has precipitated a debate over whether, in the absence of NCAA data, EADA data can be used to analyze financial trends among college athletic programs. In the recent *Nat'l Collegiate*

84. U.S. GOV'T ACCOUNTABILITY OFF., *supra* note 44, at 30.

Athletic Ass'n Grant-In-Aid Cap Litig. trial, the NCAA's Managing Director of Research, Todd Petr, testified that he regarded the EADA data as *unreliable*, citing communications with the U.S. Department of Education.⁸⁵ While references to such communications were excluded as hearsay, it is important to note that simply labeling data as "reliable" or "unreliable" without referencing for what purpose it is labeled as such is misleading. A hammer may be an unreliable means of securing a screw to a wall but a perfectly reliable tool to insert a nail into a board. Likewise, EADA data may be regarded as "unreliable" as a measure of athletic department profitability, not because of any inaccuracies, but because of the nature of data collection. However, it may be a reliable measure of trends in athletic department revenues.

At trial, the NCAA's Todd Petr based his opinion that the EDA data were unreliable on two criteria. The first criterion was the aforementioned discussion with the U.S. Department of Education, which the court regarded as hearsay. The second criterion was based on his testimony that that he and his team found "*inconsistencies*" and "*discrepancies*" between the EADA and NCAA MFRS data.⁸⁶ However, in its own documents, even the NCAA observed that differences between the two databases are to be expected: "[a]lthough the NCAA survey collects similar data to the EADA Survey, the two surveys are not identical. The survey systems do not always calculate data in the same manner and do not always use the same definitions; therefore, the numbers will not necessarily match."⁸⁷

It should be clear, then, that the existence of inconsistencies between the two databases with respect to certain metrics does not indict the reliability of either the EADA or the NCAA data. Both represent data sources collected for specific purposes. Side-by-side comparison can reveal instances when significant differences, that may warrant further scrutiny, exist between the two sources. However, such comparison may not be sufficient to determine whether one database contains a typographical error or whether the difference exists simply because of a variance in reporting criteria, particularly where reporting differences are small relative to the amount reported.

As we observe, the nature of EADA data collection imposes some limitations on its uses for research, particularly that necessitating a comparison with the NCAA's MFRS data. In its fiscal year 2009 data collection, the NCAA

85. Reporter's Transcript of Proceedings, *supra* note 23, at 1840.

86. *Id.* at 1840-41 (emphasis added).

87. U.S. DEP'T OF EDUC. – OFFICE OF POSTSECONDARY EDUC., *supra* note 40, at 9. See 2018 NCAA AUP and Financial Reporting FAQs, NCAA (May 9, 2018), https://www.ncaa.org/sites/default/files/2018NCAAFIN_FRS_FAQ_help_document_20180525.pdf ("There is no official comparison made between the two reports It is expected that there will be some differences between the two reports.").

asked member institutions whether they would prefer a combined EADA/NCAA reporting date of December 1, and 86% of its members responded in the affirmative.⁸⁸ In addition to allowing more reporting time for schools, whose fiscal years end on August 31, the combined reporting date would likely mean that schools would report identical figures for both NCAA and EADA surveys.

B. Do Significant Typographical Errors Plague EADA Data?

In addition to the testimony referenced above, the NCAA research director Petr offered another example, albeit not a specific one, of why he believed discrepancies between EADA and the NCAA MFRS rendered the former unreliable. When asked what sort of discrepancies he and his staff found, Mr. Petr responded:

Difficult for me to remember exact discrepancies but they can be from fairly small to – to we find that an extra zero is put in place where – which would change a detail by an order of magnitude. So it’s kind of all over the map, but it’s not a rare event.⁸⁹

As previously noted, discrepancies between EADA and the NCAA MFRS are expected as a byproduct of the methods in which data fields are calculated. However, potential errors of the type described merit attention. If prevalent, such errors could indeed undermine the reliability of the EADA data. If such errors are sparse or easily corrected, the EADA data would have been improperly indicted, with significant repercussions both for research and litigation, particularly that involving Title IX cases. Indeed, if the EADA data are deemed unreliable, as Mr. Petr’s testimony in the *Nat’l Collegiate Athletic Ass’n Grant-In-Aid Cap Litig.* would suggest,⁹⁰ a publicly available database offering college athletic financial data for both private and public institutions would no longer exist. As such, an assessment of the reliability of EADA data has significant research, policy, and litigation implications.

The subsequent sections investigate whether evidence exists of significant typographical errors of the type described above that may undermine the reliability of EADA data. The analysis begins by first investigating patterns in EADA data by institution and year for NCAA Division I members. Next, I compared EADA data to the *USA Today* database collected from the NCAA

88. *Recommended Changes to the EADA*, NCAA, http://fs.ncaa.org/Docs/Misc_Committees_DB/CWA10/May/Supplement%20No.%2032.pdf (last visited May 9, 2019) (Supplement No. 32 at 1).

89. Reporter’s Transcript of Proceedings, *supra* note 23, at 1841.

90. *Id.*

MFRS. This comparison proceeds on two levels, both by institution-year, and on an aggregate level for public member institutions.

1. EADA Error-Checking by Institution and Year

The EADA database contains approximately 700 variables detailing annual participation rates and financial performance of each institution's athletic department. While the same analysis described here can be performed on each of these fields, a set of key variables was selected for this analysis for two reasons: (1) to avoid overwhelming the reader and extending the discussion beyond the reasonable length criteria of a single article, and (2) to focus on variables that have garnered the most attention. For these reasons, this analysis examines the following EADA fields: total revenues and expenses; total football revenues and expenses; total scholarship funding by gender; and total athletic participation by gender. It should be noted that the EADA total revenues, expenses, athlete aid, and participation entries are calculated fields.⁹¹ That is, the EADA system calculates these totals from user inputs in sub-categories. For example, total revenues/expenses represent the aggregates of four separate revenue/expense categories: total revenues/expenses in men's sports; total revenues/expenses in women's sports; total revenues/expenses in co-educational sports; and revenues/expenses not allocated by gender or sport. Thus, assuming no programming errors, these calculated fields are only affected by typographical errors in the underlying fields they aggregate. Accordingly, these sub-fields are analyzed herein as well. Coaching salaries were also considered, but ultimately not included in this analysis. This is because, while EADA provides separate figures for head and assistant coaches, it does not report coaching salaries by sport, which can differ significantly.

The analysis proceeded as follows. First, the full EADA data were queried to extract only NCAA Division-I programs. An annual count of NCAA D-I membership, based on figures reported in EADA and the NCAA's Sports Sponsorship & Participation Rates database⁹² appears in Table 3. These reported counts differed by as many as nine members in 2009, though recent data show nearly identically-matched counts from both sources.

91. U.S. DEP'T OF EDUC. – OFFICE OF POSTSECONDARY EDUC., *supra* note 40, 47, 72.

92. These data are publicly-available from the NCAA in a Tableau workbook at *NCAA Sports Sponsorship and Participation Rates Database*, NCAA, <http://www.ncaa.org/about/resources/research/ncaa-sports-sponsorship-and-participation-rates-database> (last visited May 9, 2019).

Table 3. NCAA Division-I Institutional Membership Counts⁹³

Year	EADA Data	NCAA Data
2004	331	327
2005	331	327
2006	330	327
2007	333	327
2008	333	330
2009	342	333
2010	343	335
2011	342	338
2012	343	340
2013	343	346
2014	346	346
2015	346	345
2016	347	346
2017	346	347

Next, the annual percentage change for each of the retained fields discussed above was calculated for each NCAA D-I institution for the twelve-year period from 2005-06 through 2016-17, resulting in a panel dataset containing 4,753 institution-year observations.⁹⁴ The purpose of this calculation was to shed light on any errors, such as the potential order-of-magnitude errors to which the NCAA's Petr referred. Large absolute changes (+/- 50%) in revenues were compared with the corresponding expense field and vice versa (e.g., total revenues in men's sports were compared to total expenses in men's sports). If a typographical error, such as an added zero, occurred in a revenue field, it appears unlikely that the same error would have been repeated for the

93. *Equity in Athletics*, *supra* note 8.

94. This period also allows a comparison with the *USA Today* data, which relies on individual reports from the NCAA MFRS. See, e.g., *Methodology for 2017 NCAA Athletic Department Revenue Database*, USA TODAY, June 28, 2018, <https://sports.usatoday.com/2018/06/28/methodology-for-2017-ncaa-athletic-department-revenue-database/>. Further, some institutions were not D-I members for the entire time. Where exit and re-entry occurred, intervening years when the institution was in a different division was not included in the analysis. This was done to permit comparison of D-I aggregate numbers to NCAA data for D-I. Also, institutions reporting only one year of data for D-I (N=2, Oakwood College (2008) and Colorado Mountain College (2012)) were excluded from the analysis, as no percentage change could be computed. These appear to be transcription errors, as Oakwood is a member of the USCAA and Colorado Mountain College is a member of the NAIA.

corresponding expense field.⁹⁵ The reverse is also true, because revenues and expenses track each other very closely in NCAA D-I athletic department financials. As described previously, this is especially true considering the financial reporting criteria used in EADA data, where reported revenues and reported expenses frequently equal each other at the aggregate level.⁹⁶

Because aggregate figures, such as total revenues and expenses generally receive the most attention, the analysis begins with these metrics. The results in Table 4 detail the percentage of annual changes at the D-I institution level greater or equal to the respective threshold in each column heading. For example, less than one percent (0.736%) of the annual changes in total revenue were greater than 50%. None were greater than 200%, or three times the previous year's value.

95. The subsequent section compares changes in EADA to changes in NCAA data, which would uncover instances where a transcription error was committed in both revenue and expense fields for one institution in a given year.

96. See Reporter's Transcript of Proceedings, *supra* note 23, at 1858-9; see also FULKS, *supra* note 25, at 106, Appendix A ("Readers should be cautioned that the Department of Education EADA reports do not eliminate allocated revenues from the data. The result is that many, if not most, institutions report break-even results, since institutional support covers any resulting deficit."). However, while total revenues often equal total expenses, the same may not be true for the individual sub-categories.

Table 4. Annual Change in Selected Fields Reported in EADA Data⁹⁷

Percentage of 4,753 Total Institution/Years Indicating an Annual Change (+/-) of At Least

	50% (0.5x)	100% (2x)	200% (3x)	400% (5x)	900% (10x)
Total Revenues	0.736%	0.063%	0.000%	0.000%	0.000%
Total Expenses	0.757%	0.147%	0.042%	0.000%	0.000%
Football Revenues	4.734%	1.746%	0.800%	0.295%	0.084%
Football Expenses	1.326%	0.231%	0.084%	0.042%	0.000%
Total Athlete Aid	1.010%	0.252%	0.147%	0.105%	0.105%
Total Athletes	1.220%	0.526%	0.463%	0.337%	0.210%
Female Athletes	1.220%	0.231%	0.168%	0.105%	0.105%
Female Athletic Aid	1.452%	0.505%	0.442%	0.358%	0.189%
Male Athletes	1.262%	0.463%	0.147%	0.126%	0.105%
Male Athletic Aid	1.515%	0.631%	0.484%	0.421%	0.231%

As Table 4 indicates a low prevalence of large changes that may indicate typographical errors either in that field (for football revenues and expenses) or underlying fields (for the others listed). Even changes of 50% or more are rare. For total revenues and expenses, these occur with a frequency of less than 1%. Only football revenues show an absolute 50% change or greater occurring with more than 2% frequency and none show a greater than 5% frequency. Large absolute changes ($\geq 50\%$) occur rarely, and it is worth remembering that even large changes do not necessarily indicate typographical errors. Large annual changes may be observed when the revenues in the starting year are relatively low, and the institution receives a substantial revenue infusion relative to the previous year. Indeed, as we observe in Tables 5 and 6, the average percentage change is declining over time, as expected, because the revenues and corresponding expenses are rising. The correlation between the annual changes in total revenues and expenses from Tables 5 and 6 is approximately 98%.

97. *Equity in Athletics*, *supra* note 8. Note that these figures do not indicate error rates, but the percentage of cases where an annual change of the magnitude indicated in the column heading occurred.

Table 5. Annual Changes in Total Athletic Revenues, NCAA D-I⁹⁸

Year	Average Revenue Change	Median Revenue Change	Smallest Revenue Change	Largest Revenue Change
2006	12.70%	9.46%	-35.55%	155.85%
2007	10.18%	9.06%	-33.84%	76.79%
2008	7.90%	6.83%	-30.87%	89.76%
2009	6.90%	5.28%	-46.35%	68.66%
2010	5.20%	4.18%	-24.66%	134.37%
2011	7.49%	6.39%	-40.68%	73.47%
2012	6.64%	6.38%	-38.27%	55.83%
2013	6.41%	5.45%	-40.24%	54.36%
2014	5.92%	5.86%	-22.19%	54.74%
2015	6.68%	5.63%	-27.37%	36.17%
2016	6.27%	5.76%	-14.81%	70.29%
2017	5.19%	5.21%	-40.55%	39.25%

Table 6. Annual Changes in Total Athletic Expenses, NCAA D-I⁹⁹

Year	Average Revenue Change	Median Revenue Change	Smallest Revenue Change	Largest Revenue Change
2006	15.50%	10.42%	-58.76%	282.31%
2007	10.08%	8.59%	-30.01%	80.15%
2008	9.27%	7.77%	-22.96%	69.53%
2009	6.96%	5.73%	-46.84%	63.90%
2010	4.65%	3.10%	-24.80%	134.25%
2011	7.21%	6.63%	-40.68%	53.57%
2012	7.56%	6.93%	-38.27%	55.83%
2013	6.47%	5.45%	-40.32%	53.88%
2014	6.00%	5.78%	-26.84%	58.71%
2015	6.47%	5.55%	-25.99%	36.17%
2016	6.28%	5.67%	-14.81%	70.29%
2017	5.06%	4.89%	-40.55%	39.25%

98. *Id.*99. *Id.*

As noted above, instances where large changes in either revenues or expenses are not accompanied by similar changes in the other merit closer attention. We can illuminate such changes by graphing annual changes in revenues on the Y-axis and changes in expenses on the X-axis (or vice versa), with each data point representing one institution year. Because revenues and expenses generally track each other closely, given the nature of EADA data collection, we would expect to find clustering along a 45° diagonal line, with some clustering around the lower values close to zero. Doing so, we observe that several outlying values exist where large increases in either revenues or expenses are not accompanied by increases in the counterpart. Instances where the absolute change in either revenues or expenses exceeded 100% and the ratio between the changes either exceeded 1.5 or fell below 0.5 were extracted for further analysis and appear in Table 7. Of the 4,735 observations, only six observations (~ 0.13%), or data points, met these criteria.

Table 7. Extract of Outlying Values, EADA Revenues and Expenses¹⁰⁰

Institution	Total Revenues	Total Expenses	Change in Rev.	Change in Exp.	Ratio of Changes ($\Delta\text{Rev} / \Delta\text{Exp}$)
Central FL	\$44,802,676	\$25,343,117	110.22%	21.80%	5.056
UMd-E. Shore	\$3,482,391	\$3,482,391	19.43%	105.53%	0.184
MS Valley St.	\$2,985,705	\$2,985,705	8.83%	104.51%	0.085
UNC-A	\$3,290,466	\$3,251,839	3.61%	126.75%	0.028
UT-Martin	\$6,131,065	\$5,465,238	10.95%	241.14%	0.045
Sam Houst. St.	\$6,315,607	\$6,297,032	3.93%	282.31%	0.014

Every observation occurred in 2006.¹⁰¹ Five of the six observations met the criteria because of a significant increase in expenses, and each of these five observations occurred at low revenue/expense levels relative to those experienced among Power-5 institutions. To put these finances in perspective,

100. *Id.*

101. The survey year for these data was listed as 2005, as EADA uses the start of the academic year as the start of the survey. *Equity in Athletics Disclosure Act 2017-2018: The Report on Athletic Program Participation Rates and Financial Support Data*, U. ARK., <https://oir.uark.edu/assessment/eada/eada-report17-18.pdf> (last visited May 9, 2019) (“Information for the Reporting Year: 2017-18, beginning July 1, 2017 and ending June 30, 2018.”). For this analysis, I used the ending year to allow merging these data with other databases, including the NCAA MFRS data from *USA Today*.

the University of Iowa paid head football coach Kirk Ferentz \$2.84 million in 2006,¹⁰² over 50% of the total expenses of the entire athletic department of three of the six schools listed in Table 7. While the rarity and the low revenue levels of these five observations offer little cause to indict EADA data reliability, the figure for Central Florida, though unique, offers an instructive example regarding the nature of EADA data entries. Table 8 details the school's annual total revenues and expenses and corresponding annual changes. From these data, we can observe that the total revenue entry for 2006 appears questionable. Suspicion regarding the accuracy of this figure is further warranted because the total revenues entry in UCF's 2006 financial submission to the NCAA was \$22,860,742, lower by approximately twenty million dollars.¹⁰³

Table 8. EADA-Reported Revenues and Expenses for Univ. Central Florida¹⁰⁴

Year	Total Revenues	Total Expenses	% Δ Revenues	% Δ Expenses
2004	\$18,900,617	\$19,145,665		
2005	\$21,312,483	\$20,806,974	12.76%	8.68%
2006	\$44,802,676	\$25,343,117	110.22%	21.80%
2007	\$29,639,288	\$29,639,288	-33.84%	16.95%
2008	\$28,775,770	\$28,775,770	-2.91%	-2.91%
2009	\$29,987,609	\$29,987,609	4.21%	4.21%
2010	\$35,690,477	\$35,628,562	19.02%	18.81%
2011	\$37,821,564	\$37,821,564	5.97%	6.16%
2012	\$37,523,477	\$37,311,652	-0.79%	-1.35%
2013	\$41,957,141	\$41,957,141	11.82%	12.45%
2014	\$48,505,062	\$46,869,573	15.61%	11.71%
2015	\$51,871,022	\$46,416,703	6.94%	-0.97%
2016	\$52,317,442	\$52,317,442	0.86%	12.71%
2017	\$51,128,904	\$51,128,904	-2.27%	-2.27%

102. Steve Berkowitz et al., *NCAA Salaries*, USA TODAY, <http://sports.usatoday.com/ncaa/salaries/football/coach> (last visited May 9, 2019).

103. *Statement of Revenues and Expenses For the Year Ended June 30, 2006 (UNAUDITED)*, U. CENT. FLA. (Mar. 17, 2008), http://ucfknight.com/attachments1/files/34100/638696.pdf?DB_OEM_ID=34100 (the same figure was reported in the *USA Today* data, which relies on member submissions to the NCAA).

104. *Equity in Athletics*, *supra* note 8.

Fortunately, the EADA data provide a sport-by-sport breakdown of revenues, so the \$44.8 million revenue figure for 2006 can be investigated further. As we see in Table 8, the revenue increases, rather surprisingly, affect multiple categories.

Table 9. Changes in UCF Revenues, 2005-2006¹⁰⁵

	% Δ Revenues 2005 to 2006
Total Revenues	110.2%
Total Expenses	21.8%
Revenues (Men's Sports)	298.9%
Revenues (Women's Sports)	399.9%
Revenues (Not Allocated to Specific Sport)	65.0%
 <u>Individual Sport Revenue Changes</u>	
Baseball (Men)	913.4%
Basketball (Men)	496.7%
Basketball (Women)	846.1%
Football (Men)	248.3%
Golf (Men)	339.8%
Golf (Women)	193.6%
Rowing (Women)	763.9%
Soccer (Men)	571.2%
Soccer (Women)	295.5%
Softball (Women)	364.1%
Tennis (Men)	192.2%
Tennis (Women)	144.5%
Volleyball (Women)	281.9%

Revenues in men's and women's sports rose by ~300% (4x) and ~400% (5x) respectively, while unallocated revenues rose only by 65%. Changes in individual sport revenues range from 144% in women's tennis to 913% in men's baseball. Of additional interest, we do not observe the same individual-sport changes in data available in UCF's EADA report. One possibility that may explain the mystery of these large changes is the fact that this period coincided

105. *Id.*

with the building of UCF's \$60 million Bright House Networks Stadium (now Spectrum Stadium), which opened in 2007. Its construction and operation were not funded through public money or tuition/fees, but rather through "naming rights, revenues from suites and club seat leases, ticket and concessions sales, donations, corporate sponsorships and advertising."¹⁰⁶ To the extent that such funding accrued to the athletic department and was included in EADA data, the revenue figures for 2006 appear to reflect this possibility. Further, such one-time contributions are not endemic to EADA data. We observe similar revenue "shocks" in the NCAA MFRS data. For example, Table 10 details the revenues and expenses for the University of Oregon's athletic department from the *USA Today* NCAA finances database.¹⁰⁷

Table 10. Univ. of Oregon Athletic Department Contributions, Revenues, and Expenses¹⁰⁸

Year	Contributions	Total Revenues	Total Expenses	% Δ Contrib.	% Δ Rev.	% Δ Exp.
2005	\$11,651,406	\$39,976,635	\$40,107,833			
2006	\$11,863,044	\$45,197,269	\$44,711,104	1.8%	13.1%	11.5%
2007	\$10,589,184	\$50,489,771	\$49,531,150	-10.7%	11.7%	10.8%
2008	\$18,347,181	\$56,623,901	\$56,259,942	73.3%	12.1%	13.6%
2009	\$17,909,222	\$59,049,245	\$60,248,727	-2.4%	4.3%	7.1%
2010	\$73,809,775	\$122,394,483	\$77,856,232	312.1%	107.3%	29.2%
2011	\$33,214,707	\$85,819,699	\$76,274,142	-55.0%	-29.9%	-2.0%
2012	\$32,387,615	\$94,635,829	\$89,709,350	-2.5%	10.3%	17.6%
2013	\$46,627,597	\$115,241,070	\$94,972,708	44.0%	21.8%	5.9%
2014	\$124,927,474	\$196,030,398	\$110,378,432	167.9%	70.1%	16.2%
2015	\$27,037,513	\$105,701,523	\$103,880,557	-78.4%	-46.1%	-5.9%
2016	\$28,036,119	\$111,701,175	\$110,202,688	3.7%	5.7%	6.1%
2017	\$55,713,539	\$145,417,315	\$119,945,650	98.7%	30.2%	8.8%

In Table 10, we observe a similar phenomenon with UCF's revenue data from EADA. Indeed, Oregon's 2010 revenues experienced nearly the same increase (107.3%) in 2010 as UCF's revenue growth in 2006 (110.2%).

106. *Bright House Networks Stadium (2007)*, U. CENT. FLA., https://stars.library.ucf.edu/buildings_stadium (last visited May 9, 2019).

107. Key data in Table 10 were also cross-checked against the individual reports that Oregon submitted to the NCAA. Reports for 2008-18 can be found at *Financial Information*, U. OR. ATHLETICS, <https://goducks.com/sports/2011/11/21/205337248.aspx> (last visited May 9, 2019).

108. Berkowitz et al., *supra* note 5.

Oregon's athletic contributions show over a 300% (4x) increase in 2010 and a 168% increase in 2014. However, the EADA database shows only a 25% revenue increase in 2010 and a 0.2% increase in 2014 for the University of Oregon.

As with the UCF example, one may be tempted to dismiss the increases evidenced in Oregon's NCAA data as outliers potentially caused by typographical errors. Such a conclusion would be premature. As Salkind notes, "[b]ecause, among other things, the presence of one or more outliers can dramatically alter the values of both the mean and variance of a distribution, it behooves a researcher to determine, if possible, what accounts for their presence."¹⁰⁹ The National Institute of Science and Technology's *Engineering Statistics Handbook* echoes this instruction, noting "[o]utliers should be investigated carefully. Often they contain valuable information about the process under investigation or the data gathering and recording process."¹¹⁰ The Reference Manual on Scientific Evidence also recommends that "[i]t is important for any source of measurement error to be carefully evaluated."¹¹¹ Following these guidelines and investigating the nature of these revenue increases in 2010 and 2014, we discover the following: in 2010, Nike founder and University of Oregon alumnus Phil Knight donated \$41.7 million to the university to fund an academic center for athletes. Knight and his wife also donated \$100 million to the university's athletic department to establish a Legacy Fund.¹¹² Then, in 2013, the couple donated \$5 million to improve accessibility at Oregon's football stadium and \$68 million to build a new football training facility.¹¹³ The NCAA MFRS data appear to reflect these contributions to the football program. In 2014, Oregon's report listed \$151 million in football revenues, compared to only \$62 million and \$52 million in the 2013 and 2012 MFRS reports, respectively.¹¹⁴

The purpose of delving into such details is not to explore minutiae, but to emphasize that the existence of discrepancies between NCAA and EADA data

109. NEIL J. SALKIND, *ENCYCLOPEDIA OF RESEARCH DESIGN* 980 (2010).

110. *What Are Outliers in the Data?*, *ENGINEERING STAT. HANDBOOK*, <https://www.itl.nist.gov/div898/handbook/prc/section1/prc16.htm> (last visited May 9, 2019).

111. Daniel L. Rubinfeld, *Reference Guide on Multiple Regression*, in *REFERENCE MANUAL ON SCIENTIFIC EVIDENCE* 303, 327 (3d ed. 2011).

112. Greg Bolt, *Legacy Fund Gives UO a Leg Up on Financing*, *REGISTER-GUARD*, Jan. 4, 2011, <http://projects.registerguard.com/csp/cms/sites/web/news/25701218-57/million-seats-suites-arena-opened.csp>.

113. Mike Rogoway, *Phil and Penny Knight's Charitable Contributions Top \$2 Billion*, *OREGONIAN*, Oct. 18, 2016, https://www.oregonlive.com/business/index.ssf/2016/10/phil_and_penny_knights_charita.html.

114. *Financial Information*, *supra* note 107.

or apparent outlying values should not lead a researcher to immediately indict the data as unreliable or inaccurate. Such an assessment would not only be premature, but also misguided and potentially damaging to future research. Seldom do we encounter the analytical nirvana of perfectly clean datasets. Indeed, part of a researcher's data analysis involves investigating idiosyncrasies, outlying values, and sources of measurement error. This fact does not imply, of course, that every dataset offers reliable or accurate information. However, such a determination should not be made in cavalier fashion, particularly in instances where such a conclusion can have wide-ranging repercussions, as with a potential indictment of EADA data based on hearsay evidence or insufficient examination.

The UCF and Oregon examples above also underscore the potential for EADA and NCAA MFRS data to complement each other and inform potential weaknesses or advantages in each. As we observed, instances exist where EADA and NCAA MFRS data disagree. To assist researchers who may benefit from the conjunctive use of these data sources, the next section analyzes the level of agreement between them.

C. Agreement Between EADA and USA Today (NCAA MFRS) Data

Two comparison methods are used to analyze agreement between EADA and NCAA data. First, data from both databases are merged by institution UNIT ID and academic year. The IPEDS Unit ID was attached to the *USA Today* data using a cross-walk dataset designed to facilitate such a merge. The resulting dataset contains the institution name, ID number, academic year, and total revenues and expenses by year from both EADA and *USA Today*. Further, the dataset contains the individual components of revenues and expenses from the latter. The purpose of also retaining these fields was to investigate whether excluding one or more of these fields from the total *USA Today* revenue calculation will assist in resolving any differences that may appear between the revenue and expense totals from EADA and NCAA data. In addition, annual conference affiliations for football and men's basketball teams were added by institution and year. These affiliations were based on reported data from Sports-Reference.com (SportsRef).¹¹⁵ Another crosswalk table was created to attach the Unit ID to each team reported in SportsRef, enabling the merging of these data to the EADA/USAT.

The final dataset used for analysis consisted of annual data on approximately 220 individual public institutions at the NCAA D-I level between 2004-05 and 2015-16 for a total of 2,628 individual observations. The overall

115. See generally *Sports Reference*, <https://www.sports-reference.com/> (last visited May 9, 2019).

correlations between EADA and NCAA MFRS were 98.2% for total revenues and 99.1% for total expenses, as shown in Table 11 below.

Table 11. EADA-USA Today (NCAA MFRS) Comparison¹¹⁶

Pearson Correlation Coefficients, N = 2628

	EADA Revenues	USAT Revenues	EADA Expenses	USAT Expenses
EADA Revenues	100.0%	98.2%	99.4%	98.9%
USAT Revenues		100.0%	97.7%	98.7%
EADA Expenses			100.0%	99.1%
USAT Expenses				100.0%

While correlations indicate a strong positive linear relationship between revenues and expenses from the two databases, they do not quantify the difference between them. Table 10 shows the annual percentage difference between EADA and NCAA MFRS total revenue and total expense fields, respectively.

Table 12. EADA and USA Today (NCAA MFRS) Reported Total Revenues and Expenses (Constant 2016 Dollars)¹¹⁷

Year	#	Total Revenues			Total Expenses		
		EADA	NCAA MFRS	% Diff.	EADA	NCAA MFRS	% Diff.
2005	215	\$3,466,893,695	\$3,598,674,443	-3.7%	\$3,284,317,047	\$3,505,414,373	6.3%
2006	213	\$3,896,756,499	\$4,158,972,277	-6.3%	\$3,684,876,149	\$3,910,530,801	5.8%
2007	216	\$4,404,927,851	\$4,562,402,033	-3.5%	\$4,184,913,123	\$4,433,272,452	5.6%
2008	216	\$4,922,946,729	\$5,214,140,088	-5.6%	\$4,642,869,187	\$5,033,024,783	7.8%
2009	217	\$5,208,759,940	\$5,422,961,305	-3.9%	\$4,995,775,475	\$5,368,743,174	6.9%
2010	220	\$5,681,516,465	\$6,015,422,469	-5.6%	\$5,333,643,085	\$5,719,760,190	6.8%
2011	219	\$6,246,679,073	\$6,522,347,183	-4.2%	\$5,889,973,936	\$6,233,479,398	5.5%
2012	220	\$6,726,367,600	\$7,070,564,355	-4.9%	\$6,398,965,264	\$6,849,424,602	6.6%
2013	223	\$7,258,622,531	\$7,685,190,823	-5.6%	\$6,939,138,673	\$7,427,123,665	6.6%
2014	222	\$7,770,109,969	\$8,323,842,554	-6.7%	\$7,459,543,501	\$7,990,954,528	6.7%
2015	223	\$8,345,614,437	\$8,830,634,513	-5.5%	\$7,945,353,534	\$8,543,523,818	7.0%
2016	224	\$9,007,608,154	\$9,570,775,466	5.9%	\$8,605,719,529	\$9,299,993,358	7.5%
Totals		\$72,936,802,943	\$76,975,927,510	5.2%	\$69,365,088,503	\$74,315,245,142	6.7%

116. *Equity in Athletics*, *supra* note 8. Note Public NCAA D-I members, 2004-05 through 2015-16.

117. *Id.* Note that figures based on NCAA D-I public institutions are matched by UNIT ID and academic.

As Table 12 indicates, inflation-adjusted revenues and expenses from both sources follow both a similar trend pattern and a similar relationship with each other over time. We observe that both revenue and expenses reported in EADA data are lower than their corresponding figures from the NCAA MFRS data as reported in the *USA Today* database.

We can observe that, over time, EADA annual revenue data aggregated across the same institutions are between 3.5% and 6.7% lower than their *USA Today* counterparts. To further inform the annual differences between EADA and NCAA data, Tables 13 and 14 present descriptive statistics of these differences calculated at the individual institution level. These results, particularly the minimum and maximum values, along with the difference between the average and the median can assist in identifying potential outliers and any distribution-skewing effects they may have.

Table 13. Percentage Difference Between EADA and *USA Today* (NCAA MFRS) Total Revenue Fields¹¹⁸

Year	# Schools Included	Average	St. Dev.	Median	Min.	Max.
2005	215	-2.4%	27.8%	-1.8%	-45.3%	319.0%
2006	213	-3.5%	17.1%	-1.4%	-77.8%	96.0%
2007	216	-2.7%	17.5%	-1.5%	-45.4%	164.0%
2008	216	-4.8%	10.2%	-2.6%	-45.3%	53.9%
2009	217	-4.5%	10.7%	-2.1%	-44.7%	60.9%
2010	220	-5.2%	10.5%	-2.8%	-38.4%	63.1%
2011	219	-4.9%	10.7%	-3.2%	-29.6%	99.1%
2012	220	-5.2%	9.4%	-3.5%	-34.0%	30.6%
2013	223	-6.0%	9.3%	-3.2%	-50.0%	25.7%
2014	222	-6.3%	9.8%	-4.1%	-58.4%	23.3%
2015	223	-6.1%	9.8%	-4.1%	-45.3%	22.2%
2016	224	-4.9%	22.3%	-4.1%	-60.4%	289.0%

118. *Id.* Note that percentage difference is calculated as (EADA-USAT)/USAT.

Table 14. Percentage Difference Between EADA and *USA Today* (NCAA MFRS) Total Expense Fields¹¹⁹

Year	# Schools Included	Average	St. Dev.	Median	Min.	Max.
2005	215	-6.8%	14.9%	-3.7%	-71.2%	74.3%
2006	213	-6.3%	11.6%	-3.2%	-45.1%	79.6%
2007	216	-6.3%	9.3%	-2.5%	-44.5%	23.2%
2008	216	-6.1%	11.2%	-3.5%	-44.7%	95.4%
2009	217	-6.9%	8.6%	-4.6%	-55.4%	12.1%
2010	220	-6.3%	8.7%	-4.7%	-35.4%	41.7%
2011	219	-6.4%	8.4%	-4.8%	-33.5%	18.4%
2012	220	-6.8%	8.2%	-5.2%	-37.8%	13.9%
2013	223	-6.8%	9.2%	-4.7%	-50.8%	25.7%
2014	222	-7.2%	8.6%	-5.3%	-40.2%	17.4%
2015	223	-7.5%	9.0%	-5.4%	-45.3%	18.8%
2016	224	-7.9%	9.4%	-6.6%	-60.4%	15.6%

Table 15. The Four Cases Where Diff. Between EADA, *USA Today* Revenues Exceed 100%¹²⁰

School	Year	EADA Revenues	<i>USA Today</i> Revenues	% Diff.	EADA Expenses	<i>USA Today</i> Expenses
Alabama A&M	2005	\$4,573,721	\$1,683,089	172%	\$4,573,721	\$4,370,215
Delaware State	2005	\$6,480,115	\$1,547,636	319%	\$6,480,115	\$6,897,037
E. Kentucky	2007	\$10,398,984	\$3,931,915	164%	\$10,398,984	\$10,57,400
Alabama A&M	2016	\$10,077,657	\$2,592,863	289%	\$10,077,657	\$9,372,315

From the data in Table 15, the maximum revenue differences between EADA and *USA Today* for the years 2005, 2007, and 2016 immediately become apparent. As before, these merit investigation for at least two reasons. First, they will likely skew the relationship between EADA and *USA Today*. Second, they may uncover other potential outliers in the same year that, while still high, may be lower than the maximum in that year. Table 13 below illustrates the four instances where EADA and *USA Today* revenues differed by more than 100% of the amount reported in USAT. As we observe, 2005 contained two

119. *Id.*

120. *Id.*

such outliers, but the smaller one (Alabama A&M) was masked in Table 11 by the existence of the larger one (Delaware State).

We observe that the USAT revenue figures in Table 15 are incongruous with not only the EADA revenues but also with both EADA and USAT expenses. The USAT revenues are also suspect because EADA reported revenues by sport indicate that combined football and basketball revenues alone exceeded the total revenues reported in USAT in three of the four examines (E. Kentucky excepted). In Eastern Kentucky's case, the difference appears driven by how revenues unallocated by gender or sport have been accounted for in the NCAA MFRS. Eastern Kentucky reported \$9.3 million in such revenues in 2007, according to EADA data. However, no such contributions appear in the *USA Today* revenue breakdowns.

Two points merit emphasis regarding the results presented in the preceding tables. First, with regard to annual individual institution-level data, large discrepancies of 100% or greater between total revenues and total expenses in EADA and NCAA MFRS, as proxied by *USA Today* data, are exceedingly rare. Second, these results serve to emphasize again that indicting either dataset based only on discrepancies with the other can lead researchers astray. In previous examples showing annual percentage changes in EADA data, the *USA Today* data served as a useful check in cases where the results indicated that further scrutiny may be warranted. In the examples shown in Table 13, the reverse is true: EADA data served as a check on the NCAA MFRS figure presented in the *USA Today* data. As such, rather than treating these databases as competing sources of information on college athletic finances, interested researchers or litigants will likely be best served by using them in concert.

IV. CONCLUSION

This Article presents several findings. First, the evidence that the EADA data are plagued by typographical errors that undermine its reliability is scant. While such errors do exist, researchers can leverage other data sources and their analytical skill to address many of these errors. Researchers should not be tempted to erroneously indict the EADA data based on discrepancies with the data reported in the NCAA MFRS. As explained herein, discrepancies between similar fields exist through the nature of the data collection, as NCAA documents acknowledge. Where large differences exist, they do so with very low frequency, and when they do, these offer an opportunity for researchers to examine the sources of such disparities. Their existence should not be dismissed out of hand as outliers resulting from typographical errors without further investigation. Courts and policy-makers should be wary of blanket statements indicting EADA data as unreliable, particularly when offered by interested

parties in litigation and supported by little or no analytical rigor. The mere existence of outlying values in EADA data does not support condemning the entire database as unreliable, nor does it absolve the researcher from investigating their source before offering such an opinion.

This Article hopefully informs researchers and litigants of the availability and reliability of college athletics financial data at their disposal. Certainly, additional data may be obtained in litigation through the discovery process. Nonetheless, the findings here indicate that EADA and *USA Today*, the latter of which is culled from NCAA MFRS reports, offer reliable data upon which to base a longitudinal analysis of college athletic financials.