



Department of Economics

Working Paper Series

An Inventory of Sports Economics Courses in the US

Joshua C. Hall

Brad R. Humphreys

Hyunwoong Pyun

Working Paper No. 15-49

This paper can be found at the College of Business and Economics
Working Paper Series homepage:

http://be.wvu.edu/phd_economics/working-papers.htm

An Inventory of Sports Economics Courses in the US

Joshua C. Hall* Brad R. Humphreys Hyunwoong Pyun
West Virginia University West Virginia University West Virginia University

December 15, 2015

Abstract

Sports economics is a young, growing field in the discipline of economics. An examination of course catalogs at 169 national liberal arts colleges and 254 national universities uncovered undergraduate sports economics classes offered at 17% of the liberal arts colleges and 29.5% of the universities. The characteristics of colleges and universities offering sports economics courses are analyzed. The state of the undergraduate curriculum in economics and barriers to the creation of new elective course offerings are also discussed.

Keywords: sports economics, undergraduate education, elective course offerings

*Corresponding author. West Virginia University, College of Business & Economics, 1601 University Ave., PO Box 6025, Morgantown, WV 26506-6025, USA; Email: brhumphreys@mail.wvu.edu.

Introduction

Sports economics is an emerging field in economics. This area has established the trappings of a full-blown field in the last 15 years (Santos and García, 2011). The *Journal of Sports Economics*, the first field journal in the area, was founded in 2000; a second field journal, the *International Journal of Sport Finance* began publication in 2006. In 2007 the first organization of sports economics researchers, the North American Association of Sports Economists (NAASE) was established. This was followed by the establishment of the European Sports Economics Association (EASE) in 2009. Fifteen years after the *Journal of Sports Economics* began publication, sports economics resembles a field, like labor economics, public finance, and health economics.

Interest in sports economics, and sports economics research, has grown rapidly over the past 15 years. In part, this can be attributed to the existence of field journals as an outlet for sports economics research. Also, sports economics is primarily an empirical field, and the last fifteen years have also seen an explosion in availability of data from professional sports, and an increased emphasis on the empirical analysis of performance data from sport.¹ The last 30 years have also seen an significant increase in broadcasts of sporting events, as well as an increase in revenues from these broadcasts. These changes have made many athletes celebrities and multi-millionaires, and has substantially increased the visibility of sport in the United States and internationally (Ratten, 2011).

Along with this increase in economic aspects of sport, and the overall visibility of sport, has come an increase in student interest in sport as an academic topic of study, especially at the undergraduate level. This may reflect students' perceptions that an increasing number of jobs will be available in the sports industry in the future, or students' interest in studying topics salient to their everyday experience. Sport management programs have been established at colleges and universities across North America, which also increased interest in sports economics as an academic topic.²

Despite this growth, sports economics is still viewed by some as a “fringe” topic in the discipline. A Journal of Economic Literature code was only created for sports economics in 2015 (Z2). Sports

¹For an early analysis of how empirical the field of sports economics is, see Mondello and Pedersen (2003).

²Sports economics is a component of the officially recognized sport management curriculum (Humphreys and Maxcy, 2007).

economics is primarily an empirical field, and has a relatively small body of theory that applies only to a sports context; primarily the “two team” model of sports leagues (El-Hodiri and Quirk, 1971; Fort and Quirk, 1995) and other models of sports league behavior. Economists who define fields by their theoretical contributions often take a dim view of a research area primarily focused on empirical research. And all sports economics researchers have experienced the “not of sufficient general interest” desk rejection at general interest economics journals.

Given the increased interest in sports economics over the last fifteen years, and the potential limits placed on the field by disciplinary forces, this appears to be a good time to assess the extent to which sports economics has emerged as an undergraduate elective course at US colleges and universities. While the growth of sports economics as a field is international in scope, pragmatic concerns regarding our ability to capture a snapshot of a portion of the marketplace forced us to focus on the US market. In particular, we searched the undergraduate catalog of a large number of liberal arts colleges and “national” research universities in the United States for a sports economics course listing.

We examined the course catalog at 169 top national liberal arts colleges, and at 254 top national universities, as identified by *US News and World Report*. Sports economics was offered as an undergraduate elective at 17% of the liberal arts colleges, and at 29.5% of the national universities. While this is a relatively small offering compared to electives like labor economics and development economics, sports economics is a younger field than most others, and may be viewed as a “niche” area by economists not actively working on sports economics research. We find that sports economics tends to be offered at more selective national liberal arts colleges and at larger national universities.

The Undergraduate Economics Curriculum

Economists have devoted significant attention to undergraduate instruction. Becker (1997) conducted a comprehensive survey of teaching undergraduate economics, including the general teaching environment, teaching methods and class sizes, degree requirements, grading and the number of undergraduate majors. Although primarily focused on pedagogy, this paper emphasized the importance of undergraduate choice in course selection in economics.

Siegfried and Walstad (2014) surveyed the course requirements for undergraduate economics majors at 337 US economics departments at colleges and universities that responded to an American Economics Association questionnaire. They report that the typical economics major requirements in both colleges of arts and sciences and business schools consist of approximately 10 courses. Almost all require either one or two intro to economics courses, and all require intermediate micro and macro theory. Three quarters of all majors require some type of intro to statistics courses and about half of the economics majors surveyed required an econometrics course. This leaves roughly five or six elective economics courses in the typical undergraduate economics major.

Petkus et al. (2014) surveyed the core requirements for undergraduate economics majors at 1,601 economics programs at colleges and universities listed in the 2010 *US News and World Report* rankings. Like Siegfried and Walstad (2014), Petkus et al. (2014) report that most majors require one or two intro to economics classes, intermediate micro and macro theory, and some sort of statistics class. They find that more than half of the economics majors surveyed require 34 or more credit hours in economics classes, implying more than 11 economics courses in the major (assuming three credit hours per course).³ This estimate suggests between six and seven elective economics courses in the typical undergraduate major.

This paper follows the work of Johnson et al. (2012), who assessed the prevalence of econometrics course offerings in US undergraduate economics majors. Johnson et al. (2012) found that about a third of the institutions surveyed required econometrics for all majors as part of the undergraduate curriculum, about a sixth required econometrics for some but not all majors, and the rest of the departments did not require econometrics. We use a similar sample, and similar data collection methods in this paper. Johnson et al. (2012) collect data from all 1,428 universities and colleges listed in the 2010 *US News and World Report* rankings, a much larger sample of institutions. However, given the small number of sports economics courses listed in catalogs in our sample, we have likely not missed many sports economics courses.

³Petkus et al. (2014) include mathematics and statistics courses in their count of required economics courses.

Data Description and Analysis

Like Johnson et al. (2012), we began with the 2013 US News and World Report rankings of “national” liberal arts colleges (LAC) and “national” universities (UNI). In the US News ranking methodology, “national” LACs “focus almost exclusively on undergraduate education. They award at least 50 percent of their degrees in the arts and sciences”; UNIs “offer a full range of undergraduate majors, plus master’s and doctoral programs, and emphasize faculty research.” We searched the on-line course catalogs for the 169 highest ranked “national” LACs and the 254 highest ranked UNIs for undergraduate courses in sports economics, or with course titles that suggest that sports economics was an important component of the course.⁴ We also collected data on other upper level undergraduate elective courses in economics.

Of the 169 LACs surveyed, 29 (17.2%) had an undergraduate sports economics class listed in the course catalog. Of the 254 UNIs surveyed, 75 (29.5%) had an undergraduate sports economics course in the course catalog. Note that we did not check the schedule of courses to determine how often, or how recently, each course had been offered.

Table 1: Undergraduate Economics Elective Courses Offered (%)

Institution Type	Sports	Labor	Enviro.	Health	Develop.	Urban	Hist. Thought
Liberal Arts Colleges	17.2	69.2	78.7	36.1	75.2	29.0	55.0
Universities	29.5	85.8	73.6	59.8	78.0	51.2	50.0

Table 1 summarizes the number of LACs and UNIs offering a selected number of undergraduate economics elective courses, in addition to the sports economics offerings. Environmental economics, development economics, and labor economics are commonly offered electives at top national liberal arts colleges and top national universities. Both health economics and urban economics are offered at more than half of the top national universities. Somewhat surprisingly, history of economic thought is in the curriculum at about half of all top national liberal arts colleges and top national universities (although it may not be offered regularly). Sports economics is not an available elective course relative to all these more traditional electives. Also, sports economics is less popular at top national LACs than at top National universities.

⁴Specific course titles included “The Economics of Professional Sports,” “Economy of Sports,” “Economics of the Sports and Entertainment” and other similar titles.

For additional context, Siegfried and Wilkinson (1982) reported that 45.6% of surveyed economics departments offered an undergraduate econometrics class in 1980. Johnson et al. (2012) reported that 81% of surveyed economics departments offered an undergraduate econometrics class in 2010, and about 33% required this class. Substantially fewer colleges and universities offer a sports economics class in 2013 than offered an econometrics class 34 years ago, before the advent of desktop computing and spreadsheet programs.

We augmented the data on elective offerings at top national LACs and UNIs with institutional characteristics data from the US Department of Education’s Integrated Postsecondary Education Data System (IPEDS). This program systematically collects data on characteristics of all institutions of higher education in the country. Table 2 summarizes the characteristics of top national LACs with and without sports economics electives.

Table 2: Summary Statistics, Characteristics of LACs

	No Sports Econ Class				Sports Econ Class			
	mean	sd	min	max	mean	sd	min	max
Total Enrollment	2033	1002	409	5410	2274	940	953	4576
Male Enrollment	889	631	0	3874	987	439	83	2077
Female Enrollment	1144	618	0	3182	1287	679	1	3303
NCAA Member	0.97	0.167	0	1	1	0	1	1
Total Applicants	3867	2763	189	19146	4535	2105	1320	8847
Total Admissions	1822	996	159	5500	1998	928	597	4711
Private Institution	0.94	0.246	0	1	0.97	0.186	0	1
Incoming ACT/SAT math score (%-ile)	83.78	12.09	27	99	90.69	8.19	75	99
Sports Management Program	0.04	0.186	0	1	0.03	0.186	0	1

The LACs that offer sports economics tend to be slightly larger in terms of enrollment; they also tend to have larger applicant pools and admit more students. All LACs that offer sports economics are NCAA members, while 90% of those that do not offer sports economics are NCAA member institutions.

In order to capture the selectivity of these LACs, we developed a standardized measure of the performance of the most recent (2012) incoming undergraduate freshman class on the math component of the SAT and ACT exams. IPEDS reports ACT and SAT scores for incoming freshmen at the 75th percentile and 25th percentile of the distribution of scores for each class at each institution. Some institutions accept only the SAT, some accept only the ACT, and some accept both. We

converted these raw scores into a percentile score on the SAT and ACT, respectively. When both exam scores are accepted, we used the reported SAT score. For example, for Colby College (an LAC in our sample) the SAT math score for the 75th percentile of the incoming 2012 freshman class was 720; that score is at the 90th percentile nationally for the SAT exam.

For national LACs offering no sports economics elective, the incoming freshman class SAT/ACT math score was at the 83rd percentile. For national LACs offering a sports economics elective, the incoming freshman class SAT/ACT math score was at the 89th percentile. Sports economics was offered at more selective national LACs.

Table 3: Summary Statistics, Characteristics of National Universities

	No Sports Econ Class				Sports Econ Class			
	mean	sd	min	max	mean	sd	min	max
Total Enrollment	23380	13716	1525	70248	24968	12941	3777	56642
Male Enrollment	11005	6776	700	31225	11800	6355	1631	29944
Female Enrollment	12375	7216	765	39023	13167	6957	1968	30435
NCAA Member	0.99	0.106	0	1	0.99	0.116	0	1
Total Applicants	18008	13536	128	61717	16909	12291	1755	72676
Total Admissions	9106	6710	63	35815	8729	5087	1302	25772
Private Institution	0.34	0.475	0	1	0.32	0.47	0	1
Incoming ACT/SAT math score (%-ile)	81.74	14.3	24	99	82.60	12.9	36	99
Sports Management Program	0.54	0.49	0	1	0.58	0.49	0	1

Table 3 summarizes the characteristics of top national universities that offer, and do not offer, sports economics as an upper level undergraduate economics elective. The enrollment at national UNIs is substantially larger than at LACs. The top national UNIs that offer sports economics are slightly larger than those that do not offer sports economics. However, UNIs that offer sports economics classes have smaller applicant pools. UNIs that offer sports economics tend to have a larger ratio of female-to-male students. In terms of selectivity, NCAA membership, and control of institution, there is little difference between top national universities that offer sports economics and those that do not. UNIs which offer sports economics also tend to provide sports management program, and this result contradicts our expectation.

The IPEDS data also contains information about the Carnegie Classification of LACs and UNIs in this sample. The Carnegie Classifications are a framework for classifying institutions of higher education that identifies institutions that are similar to one another along various dimensions, including program offerings, research focus, student body, size, and degrees granted. We examine

the Carnegie Classification undergraduate profile for LACs and UNIs. The undergraduate profile reflects the relative proportion of full-time and part-time students, the selectivity of admissions, and the fraction of students who transfer in to an institution.

On the tables below, *medium FT 4-year* means that more than 60 % but fewer than 80 % of students are full-time; *FT 4-year* means that more than 79% of students are full time. *Inclusive* means that students had a 25th percentile ACT-equivalent score less than 18; *selective* means that students had a 25th percentile ACT-equivalent score from 18 to 21; *more selective* means that students had a 25th percentile ACT-equivalent score greater than 21. The break point between *lower transfer-in* and *higher transfer-in* is 20% of the student body.

Table 4: 2010 Carnegie Undergraduate Profile - LACs

	No Sports Econ	Sports Econ
Medium FT 4-year, selective	1.43	0.00
FT 4-year, inclusive	0.71	0.00
FT 4-year, selective, lower transfer-in	25.71	23.33
FT 4-year, selective, higher transfer-in	3.57	0.00
FT 4-year, more selective, lower transfer-in	67.14	73.33
FT 4-year, more selective, higher transfer-in	1.43	3.33
% in each classification		

Table 4 summarizes the Carnegie Classification undergraduate profile of top national liberal arts colleges by sports economics course offering. Most LACs that offer sports economics are full-time four-year selective or more selective LACs with relatively few students transferring in. This is similar to the classifications in the US News and World Report list of top national LACs. From Table 4, LACs offering sports economics are similar to LACs not offering sports economics, in terms of their Carnegie Classification undergraduate profile.

Table 5 summarizes the Carnegie Classification undergraduate profile of top national universities by sports economics course offering. Sports economics courses are offered by more *medium*, *selective* UNIs than in the LACs, although there are many more institutions in this classification among top national universities. Sports economics courses are disproportionately offered at top national universities with higher transfers into the school, and more frequently at *selective* top national universities compared to *more selective* top national universities.

Finally, to better understand the factors that explain why a college or university offers a sports

Table 5: 2010 Carnegie Undergraduate Profile - UNIs

	No Sports Econ	Sports Econ
Medium FT 4-year, selective	17.98	14.67
FT 4-year, inclusive	5.06	6.67
FT 4-year, selective, lower transfer-in	8.99	8.00
FT 4-year, selective, higher transfer-in	20.79	24.00
FT 4-year, more selective, lower transfer-in	32.58	29.33
FT 4-year, more selective, higher transfer-in	14.61	17.33
% in each classification		

economics course, we estimate a Probit model to assess the relative effect of characteristics shown in Table 2 and Table 3 on offering sports economics as an elective course. In addition to the institution-specific variables discussed above, we also obtained data on whether a LAC or UNI has an undergraduate sports management program. LACs and UNIs may not provide sports economics electives if they have a sports management program and any courses covering sports economics are already offered in the sport management program. For LACs, only few have a sports management program so our prior is that sports management programs are not likely to affect the offering of sports economics electives at LACs.

The dependent variable in the Probit model takes a value of 1 if LACs or UNIs offer a sports economics elective course, and 0 otherwise. The model takes the form:

$$Pr(\text{sportsecon} = 1) = \beta_0 + \beta_1 \text{totenroll} + \beta_2 \text{femenroll} + \beta_3 \text{NCAA} + \beta_4 \text{totapplicants} \\ + \beta_5 \text{totadmissions} + \beta_6 \text{privinst} + \beta_7 \text{ACTSAT} + \beta_8 \text{smprogram} + \mu$$

where *totenroll* is the total enrollment at the school, *femenroll* is the number of females enrolled, *NCAA* is equal to 1 when a LAC or UNI is a member of the NCAA, *totapplicants* is the number of total applicants, *totadmissions* is the number of total admissions, *privinst* is an indicator variable equal to 1 when a LAC or UNI is a non-profit private institution, *ACTSAT* is the incoming ACT/SAT math score, and *smprogram* is an indicator variable equal to 1 when a LAC or UNI has a sports management program.

Table 6 shows the results of the Probit model estimation. The results generally confirm our

Table 6: Empirical Results (Marginal Effects) - Probit Model for Offering Sports Economics

Explanatory Variable	LACs	UNIs
Total Enrollment	4.6e-05 (060)	4.52e06 (0.35)
Female Enrollment	-6.4e-05 (-0.66)	-1.13e-06 (-0.05)
NCAA	— —	0.120 (0.04)
Total Applicants	-1.6e-05 (-0.90)	-3.49e-06 (-0.93)
Total Admissions	4.5e-06 (1.12)	-3.98e-06 (-0.51)
Private Institution	0.042 (0.25)	0.007 (0.08)
Incoming ACT/SAT Math Score	0.012*** (3.23)	0.002 (0.79)
Sports Management Program	0.079 (0.48)	0.031 (0.48)
Pseudo R-squared	0.09	0.01
# of observations	164	246

Dependent variable: Offering sports economics electives.

Marginal effects at mean are shown

t-statistics in parentheses * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$, respectively

findings from the summary data that there are no strong drivers of sports economic course adoption at the institution level. While the signs of the parameter estimates are generally what would be expected, no coefficients are statistically significant for UNIs. For LACs, only the coefficient on incoming ACT/SAT math score is statistically significant. The NCAA membership indicator variable is omitted for LACs as all LACs which offer sports economics course are members of the NCAA.

To summarize our empirical results, sports economics is an infrequently offered undergraduate elective course at both LACs and UNIs, especially when compared to other more established undergraduate electives like labor economics, development economics, environmental economics, and even urban economics. Sports economics is a more common undergraduate elective at top national universities than at top national liberal arts colleges. Among LACs, sports economics courses tend to be offered at more selective institutions, based on the incoming freshman class SAT/ACT math score, and at slightly larger institutions. These factors, with the exception of incoming ACT/SAT Math Score for LACs, do not explain the probability of a school offering a sports economics course. Sports economics elective courses are relatively randomly distributed across LACs and UNIs in this sample.

Concluding Discussion

Sports economics is an uncommon elective course offering in this sample of US Liberal Arts Colleges and Universities. What factors explain why so few undergraduate sports economics courses are offered? Obviously, sports economics is a relatively new field with relatively few researchers working in the area. Labor economics has been a field since the early days of the discipline, and most PhD programs in economics offer labor as a field or graduate-level elective course, so labor economics would be expected to be offered widely in the undergraduate curriculum.

Offering new undergraduate elective courses requires significant start-up costs, which constitute an entry barrier for new course creation. New courses must pass through committee oversight at the department, college, and university levels. A course syllabus must be developed and an appropriate textbook or course reading list identified before a new course offering is approved. Forms must be filled out, and in some cases a department must address the resource requirements generated by

a new course in the catalog. These all involve significant costs for faculty, and also generate uncertainty because the outcome of committee decisions, especially at the college or university level, can be unpredictable.

The offering of elective courses can be influenced by both supply and demand side factors. On the supply side, a department must have a faculty member who is both interested and able to teach an upper level undergraduate elective course. Since sports economics is not a topic offered at the PhD level in any economics department (to our knowledge), new faculty never have a “field” specialization in sports economics, and a relatively small number of researchers will have a broad perspective on the full breadth of sports economics-related research. Much of sports economics consists of applications of models drawn from other fields like labor, industrial organization, and public economics; this may also limit some faculty interest in the topic, since sports economics draws from many different applied micro fields, requiring a relatively broad research orientation to be attractive.

A number of constraints also exist on the supply side. Economics departments have a limited number of faculty and must staff required undergraduate, and in some cases graduate courses, in theory and econometrics, as well as provide service enrollments at the principles level. The degrees of freedom available to ‘field test’ new elective courses might be limited in smaller departments, which might be reflected in less selective LACs adding sports economics courses at a lower rate.⁵ Electives at LACs also often have to serve other majors (international relations, environmental studies, area studies) in order to ensure sufficient enrollment. Also, available rooms and class time slots may be limited at some colleges and universities, constraining the development of new elective courses. Since sports economics is a young field, most departments already have a large existing portfolio of elective courses in the catalog that were created years or decades ago; this list grew over time as faculty with different research interests came and went. Perhaps this list creates a form of status quo bias in hiring, where individuals are hired with the idea of filling existing course slots rather than anticipating future demand.

On the demand side, new elective course offerings will be limited by the number of economics majors, the number of elective courses already offered by a department, and interest in a topic

⁵Our results for LACs might be understating the number of sports economics courses that have been offered at LACs if they are taught as first-year seminar courses, whose titles do not appear in catalogs as they are not permanent courses.

among undergraduate students. Undergraduate enrollments in the US have grown over time, and according to National Center for Education Statistics estimates, the number of undergraduate economics degrees granted in the US has also grown substantially, increasing by 37% from 1998-99 to 2003-04 and by 9% from 2003-04 to 2008-09. This suggests increased demand for elective courses in economics over time. Similarly, this period has seen the rise of interdisciplinary majors that often have economics courses as part of their curriculum. Two prominent examples are environmental studies and environmental economics and sports management and sports economics. The recent surveys by Siegfried and Walstad (2014) and Petkus et al. (2014) suggest that typical economics majors have between five and seven elective courses.

An increasing number of undergraduate economics majors may not lead to an increase in the number of elective courses offered. If a department is operating with significant excess capacity, in terms of seats in classrooms, then an increase in the number of economics majors can simply lead to a larger number of enrollments per elective course offered. Alternatively, many departments have a large number of elective courses in the catalog that have not been offered in many years, or are offered infrequently. An increase in enrollment could lead a department to offer an elective that has long been on the books but not offered, instead of going through the long and costly process of adding a new course to the course catalog.

Some insight can be gained by comparing sports economics to health economics, as both are relatively new fields. The seminal article in health economics is generally regarded as “Uncertainty and the welfare economics of medical care” (Arrow, 1963). This paper appeared much later in the literature than the seminal article in sports economics “The baseball players’ labor market” Rottenberg (1956) .⁶ The first field journal in health economics, the *Journal of Health Economics* started in 1982. A second field journal, *Health Economics* started in 1992, and a third, the *American Journal of Health Economics* published its first issue in 2015. The first professional association in health economics, the American Society of Health Economists, was founded in the 1980s.

Health economics emerged as a field earlier than sports economics, based on the year in which the first field journal was founded in each area. Health economics is clearly a larger field than sports economics, based on the number of field journals and conference attendance. The American

⁶Arrow’s paper was published at roughly the same time as “The peculiar economics of professional sports” (Neale, 1964), another seminal paper in sports economics.

Society of Health Economists conference in June 2014 contained 15 concurrent sessions over three days, more than 500 papers, and more than 700 attendees. The NAASE session at the WEAI Conference in July 2014 contained about 75 papers. From Table 1 health economics is a more commonly offered undergraduate elective course than sports economics at both top national liberal arts colleges and top national universities. Since sports economics is younger, more growth in sports economics research, and offering of sports economics courses might be expected in the future.

The primary goal of this paper is to document the number of sports economics courses currently offered at US colleges and universities. The number offered is smaller than expected, based on informal discussions at conferences. This raises two related questions: should the community of academic sports economics researchers encourage economics departments to offer more undergraduate sports economics classes; and if so, how can this be accomplished? The results presented here provide some guidance in answering the first question, but the second requires careful thought.

Academics who have invested significant time and effort in sports economics research have an interest in maintaining the viability of the field in a discipline with a large and growing number of research areas. One way to ensure that sports economics remains relevant, in terms of overall interest in the area, is to make sports economics a more established course offering at the undergraduate level.⁷ This argues for a systematic effort aimed at expanding the number of sports economics elective courses offered at LACs and UNIs. A natural place for such an effort to start is from one of the organizations of sports economics researchers.

References

- Arrow, K. J. (1963). Uncertainty and the welfare economics of medical care. *American Economic Review*, 53(5):941–973.
- Becker, W. E. (1997). Teaching economics to undergraduates. *Journal of Economic Literature*, 35(3):1347–1373.
- El-Hodiri, M. and Quirk, J. (1971). An economic model of a professional sports league. *Journal of Political Economy*, 79(6):1302–1319.

⁷As a field that builds off theories from many other fields, sports economics would seem to be an excellent topic for an undergraduate capstone course. In addition, it would make an excellent undergraduate research or writing course given the wide variety of publicly available data on amateur and professional sports.

- Fort, R. and Quirk, J. (1995). Cross-subsidization, incentives, and outcomes in professional team sports leagues. *Journal of Economic Literature*, 33(3):1265–1299.
- Humphreys, B. R. and Maxcy, J. (2007). The role of sport economics in the sport management curriculum. *Sport Management Review*, 10(2):177–189.
- Johnson, B. K., Perry, J. J., and Petkus, M. (2012). The status of econometrics in the economics major: A survey. *Journal of Economic Education*, 43(3):315–324.
- Mondello, M. J. and Pedersen, P. M. (2003). A content analysis of the journal of sports economics. *Journal of Sports Economics*, 4(1):64–73.
- Neale, W. C. (1964). The peculiar economics of professional sports: A contribution to the theory of the firm in sporting competition and in market competition. *Quarterly Journal of Economics*, 78(1):1–14.
- Petkus, M., Perry, J. J., and Johnson, B. K. (2014). Core requirements for the economics major. *Journal of Economic Education*, 45(1):56–62.
- Ratten, V. (2011). International sports management: current trends and future developments. *Thunderbird International Business Review*, 53(6):679–686.
- Rottenberg, S. (1956). The baseball players' labor market. *The Journal of Political Economy*, pages 242–258.
- Santos, J. M. S. and García, P. C. (2011). A bibliometric analysis of sports economics research. *International Journal of Sport Finance*, 6(3):222–244.
- Siegfried, J. J. and Walstad, W. B. (2014). Undergraduate coursework in economics: A survey perspective. *Journal of Economic Education*, 45(2):147–158.
- Siegfried, J. J. and Wilkinson, J. T. (1982). The economics curriculum in the United States: 1980. *American Economic Review*, 72(2):125–138.