HANDBOOK OF SPORTS ECONOMICS RESEARCH

EDITED BY JOHN FIZEL

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Introduction

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Handbook of Sports Economics Research

An Overview

John Fizel

The *Handbook of Sports Economics Research* is a foray into an exciting and escalating market, the business of sports. In the past five years alone, there have been hundreds of academic sport-related publications, a plethora of new course offerings in sports economics, the development of new textbooks in sports economics, and a significant increase in the number of sessions at economic conferences devoted to economic analysis of sports.

Moreover, it is the business of sports that transforms the games into organized entertainment for viewing by a large segment of the population. Over the last twenty years, the public appetite for sports entertainment has provided the opportunity for skyrocketing franchise values, multi-million-dollar television contracts, average player salaries in excess of $1 million, flourishing markets for sports memorabilia, and hundreds of millions of public dollars directed toward stadium construction.

The growth in sports economics research, in my view, results from the unique opportunities the sports industry provides for both theoretical and empirical analysis. First, the sports industry generates a level of interest much greater than other industries. Issues in sports are prominent in daily reports in the press—including news, business, and sports sections—in discussions at the office water cooler or with neighbors or friends, and frequently are used as examples in books, speeches, and the classroom. Second, there are the peculiar aspects of the industry (Neale, 1964). The output of sports is a joint product where the firms in the industry must compete and cooperate for the league to thrive. In addition, the output of the industry is fixed so that the

average winning percentage is always 0.5. Also, employment levels are fixed and complicated by several unique institutional rules about employee mobility, salary negotiations, and so on. Third, the basis of economic analysis is individual decision-making motivated by self-interest, which is a perfect fit with the sports industry. In sports, one can easily collect detailed measures of player and team productivity, identify individual decisions (e.g., player, manager/coach, or arbitrator decisions), and determine how judgments and performance change as incentive structures are altered. Finally, the economic analysis of sports employee productivity, labor relations, marketing, and profitability often parallel the analysis of business in general. The wealth of data about sports makes the industry a laboratory to observe economic and business behavior and theory not possible in other industries where there is a dearth of public information.

In the next chapter, Jewell addresses the quality of the research in sports economics. He finds that sports economics has moved from a diversionary and occasional academic exercise to a place of prominence and legitimacy within the economics discipline. Jewell reviews a number of articles that have been published in the best economic journals, highlighting the innovative methodologies, excellent data, and well-crafted arguments that are now common in sports economics research.

In short, sports economics is an influential and rigorous field of study that has experienced significant growth in a short time. The *Handbook of Sports Economics Research* is an opportunity to reflect on these changes and assess the state of the art.

The dynamic nature of the sports industry continually introduces new issues and uncovers new aspects of old issues. The chapters in this book examine what we know, what we do not know, what is stable, what is changing, what is certain, and what is controversial in sports economics. They present surveys of specific sports economics topics and suggest new and untapped avenues of research.

The *Handbook of Sports Economics Research* allows a reader to address issues in a particular sport or make comparisons along major topics of importance such as:

- Revenues and costs
- Labor markets (restrictions, discrimination)
- Market structure (league and association organizations)
- Market outcomes (competitive balance, the pursuit of winning versus profits)
- Public and league policy

Part II offers six chapters that review and analyze specific sports. Berri begins this part with an examination of the National Basketball Association

(NBA). He notes that NBA research is dominated by studies on discrimination, perhaps because of the historically high minority participation levels. He finds mixed results for salary, hiring, and customer discrimination research, but concludes that definitive analysis is elusive because replication across different data sets and methodologies is absent. Berri continues with a review of player productivity as related to salaries and team objectives. In this context, he provides a number of interesting and provocative insights. Much more is available in the chapter.

Leadley and Zygmont turn our attention to the National Hockey League (NHL). They find that much of the research about the NHL, like that on the NBA, addresses discrimination. In this case, the focus is on discrimination toward French Canadian players. No consensus is apparent. Leadley and Zygmont turn next to the effect of player violence on player salaries and team attendance. They find attendance increases with the level of violence. They also find that players designated as enforcers seem to receive compensation for violence, which is consistent with the value of violence reflected in higher attendance. A unique aspect of labor market studies addressed in Leadley and Zygmont's review is the joint production of teammates. Additional insights are offered about attendance and franchise location, each of which is particularly important in light of the positions held by players and owners that led to the cancellation of the 2004–5 NHL season.

Fizel and Hadley offer a synopsis of the research issues involving the unique, three-tiered labor market of Major League Baseball (MLB). Not surprisingly, they find that the reserve clause has been shown to consistently lower player salaries relative to salaries of free agents. However, the relationship of all players' salaries relative to marginal revenue product is an increasingly unsettled issue, as new models of measuring MRP appear in the literature. Some research even indicates that with the choice of free agency, players early in their careers may opt to select to operate under the reserve clause as part of an optimal contracting arrangement with owners. The applicability of the invariance principle is also unresolved. New models of arbitration negotiation have resulted in useful insights into player and owner decision-making, but aspects of discrimination, MLB structural changes, arbitration panels, and more offer significant future research opportunities.

Matheson continues the analysis of specific sports with his survey of European football (soccer). Among other topics, Matheson discusses three aspects of soccer that are distinctly different than North American sports. First, players in soccer are frequently traded for cash settlements, not for other players or draft choices. Second, soccer is played in leagues that do not have a fixed set of teams. Teams may move from one league to another as they are promoted to a better league for a good team performance or relegated to a lower league

for a poor team performance. Third, the playing and regulatory aspects of soccer are quite unique.

Humphreys takes us to the world of women's collegiate athletics. The key issue is Title IX. Humphreys adds clarity to the discussion on definition, application, compliance, and effects of Title IX by removing the emotional rhetoric and applying an economic foundation for analysis. A number of additional issues are weaved into the presentation of the Title IX literature, with some intriguing and surprising conclusions. Humphreys also addresses gender regulation and compensation among coaches and players.

The last chapter of Part II focuses on individual sports and how individual sports fit into economic theory. As von Allmen points out, it is not how well one performs that matters in an individual sport, it is the rank order of one's finish that counts. As a result, von Allmen reviews the research on rank-order tournaments and their relevance to optimal contest design and optimal compensation systems. He also reviews applications within a number of individual sports including golf, track, motor racing, tennis, thoroughbred racing, and more. [1]

Part III offers two chapters that deal with issues relevant across various sports. Krautmann and Hadley offer an analysis of the literature on demand for sporting events. Although demand analysis may seem rudimentary and straightforward, it is not. Krautmann and Hadley explain the complications in measuring output and price, the foundation for any demand analysis. These complications, they find, cause some counterintuitive empirical results. Theoretically, one would expect a profit maximizing firm to price in the elastic portion of the team's demand curve, but empirical evidence for this behavior is lacking. Sometimes, the research even finds a positive relationship between price and ticket sales. Krautmann and Hadley do their own empirical analysis to highlight the issues surrounding price as well as address other important demand determinants.

Next, Fort examines the existing research on competitive balance in North American professional sports. A peculiar aspect of sports described earlier is that the output of sports is a joint product where the firms in the industry must compete and cooperate for the league to thrive. Teams compete to be successful, but if one team is "too successful" and competitive balance within the industry is compromised, fans lose interest and the league fails. Fort points out that competitive balance is multidimensional, and, as a result, he assesses the competitive balance in sports using three different measures of competitive balance. He also incorporates an assessment of cross-sectional and time-series analyses using these measures. This review paints an interesting picture of where competitive balance is and how it has changed over time. Fort also suggests that policy choices by North American sports leagues

appear to have little effect on competitive balance and that the research on competitive balance has only just begun.

Part III, the concluding part of the *Handbook*, examines the econometric tools and theoretical framework that have been underutilized in sports economics research and that provide an opportunity for several new threads of research.

This part of the book starts with Lee's discussion of efficiency estimation. Efficiency is determined by how well a team or manager uses player talent to generate wins or team profits. Measuring and understanding efficiency is critically important in industries faced with salary caps, taxes on high payrolls, and the disparity in market size of teams, which almost mandates that small-market teams be efficient to survive. Lee begins with an overview of the existing literature, indicating the variety of estimation techniques used to assess production or cost efficiency. He also addresses the important role of using *ex ante* or *ex post* player talent data. He follows with a discussion of stochastic frontier models, how they can provide new insights into efficiency estimation, and how they can incorporate the peculiar aspects of sports economics.

Leeds and McCormick also explore the econometric possibilities in sports economics research. Their presentation addresses specification issues in cross-sectional and time-series analysis. More specifically, some of the topics include sample selection bias, quantile regressions, and causality issues. Many relationships in sports involve endogenous variables, but seldom are endogeneity issues explicitly addressed. Leeds and McCormick explain the implications of this oversight and provide guidance on how to treat the issue. Also, comparative analyses of players within a sport focus on a distribution around the average performance or compensation. Leeds and McCormick demonstrate how quantile analysis examines the entire population not just the average player. In addition to addressing the foundations of time-series analysis, Leeds and McCormick suggest that causality analysis is underutilized.

In the final chapter of the *Handbook*, Szymanski creates a framework for theoretically analyzing contests, whether they exist as individual sports competitions or games played within a sports league. This framework and the analysis it permits is clearly in its infancy. In my opinion, Szymanski provides a result that will cause all of us to explore more about modeling contests. Typically, economists expect talent to be allocated to its most valuable location. Doing so, the marginal revenue of a win will be equalized across the league. Szymanski's models find that this is not true. The implication of his result is that the total profits of the league are increased when talent is moved from weaker to stronger teams (is this the Yankee dream or what?).

In closing, I want to thank all of the contributors for a job well done. Their work would have been outstanding if they had only presented the results of the voluminous research in their topic areas. But, as you will read, they have

also provided critical analysis of the results and have shown great insights into suggestions for future research streams. My comments about each chapter are limited, with many more topics to be discovered in each chapter. I believe that you will find the *Handbook of Sports Economics* useful, thought provoking and, hopefully, enjoyable.

Note

1. Men's collegiate athletics (NCAA) was consciously omitted from the *Handbook of Sports Economics Research* because extensive and current reviews of this topic already exist. For more on the NCAA, see Fleisher, Goff, and Tollison (1992), Zimbalist (1999), and Fizel and Fort (2004).

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Sports Economics

The State of the Discipline

R. Todd Jewell

Sports economics is firmly established as a legitimate field of economics. Given the apparent acceptance of sports economics, one might expect this would translate to academic self-respect and respect among ones peers. However, this appears not to be the case for those who study the sports industry. For instance, at a recent national conference frequented by sports economists, I heard various comments that lamented a perceived lack of respect for sports research within economics as a whole. This chapter provides some evidence that sports economics is a thriving and respected field of economics and that it has potential for continued growth. Most importantly, it appears high-quality sports-related research can be, and increasingly is, published in the best economics journals. This research is characterized by the use of innovative methodologies and outstanding data. In addition, a clear statement of the importance of the research to economics as a whole increases the probability of publication and should increase the impact of the research on future scholarship. My comments are designed to continue a dialogue among researchers who wish to analyze the position of the sports economist in the context of the entire economic discipline.

I define a sports economist as one who does research on sports-related topics. There are two unique, but not mutually exclusive, strains of sports-related research. First, in order of appearance in the literature, there is research that applies microeconomic theory to the sports industry in an attempt to understand the markets of sports. This strain can be referred to as "sports-microeconomics" and contains papers that develop or adapt economic theory for use in describing the sports industry. The history of such studies spans some fifty years. In the past thirty years, another literature has developed

that uses sports data to test or explain various components of microeconomic theory. Goff and Tollison (1990) call this type of research "sportometrics," comparing it to experimental economics that uses data from sporting contests instead of laboratory data. The intents of these two strains differ; sports-microeconomics has a narrowing focus, from the larger field of microeconomics to the smaller field of sports economics, while sportometrics has an expanding focus, from sports economics to microeconomics. Although there is clearly room for both in sports economics, the "sportometrician" is more concerned with acceptance outside the subdiscipline than is the "sports-microeconomist."

It is incumbent upon sports economists to explain why their research can be generalized beyond the sports industry, something at which they have become increasing adept. Most arguments for the validity and importance of sportometric research hinge on two major issues. First, sportometricians have the advantage of excellent and detailed data. Specifically, sports data are often better suited for testing and analyzing economic theory than data from other industries. Second, the sports industry generates a level of interest that is greater than that of most other industries, and this is especially true for college students.[1] The most-used argument against the importance of sportometric research appears to be the following: Although sports data are almost always of better quality than data from other industries, the results are not easily generalized and are, therefore, unimportant except to help understand the sports industry. Based on this argument, sports-microeconomics is a legitimate area of research, but sportometrics is not. In addition, some feel a bias exists among "real" economists—and other scholars as well—that sport is frivolous and doing research on such trivial matters is unworthy of academic interest. Among sports economists, the view is that sportometric research is important in understanding the sports industry and gives insights that can help us understand behavior in other industries and situations.

A Brief Discussion of the Literature

In an effort to analyze the impact and relevance of sports research, it may be instructive to review the sports literature in order to understand its development over time, including how its impact on the economics discipline has developed. Since an exhaustive survey is beyond the scope of this chapter, a selected literature review will have to suffice. With apologies to those researchers who have published in other economics journals, I only consider papers published in two of the most-respected journals, the *American Economic Review* (*AER*) and the *Journal of Political Economy* (*JPE*). A scholar who publishes in these journals has received a level of recognition

for his or her work that spans all the fields of economics. Readers are directed to the other chapters in this volume for more-detailed literature reviews.[2] Much of the empirical research in these two journals has analyzed baseball or used data from U.S. Major League Baseball (MLB). As sports researchers have attempted to incorporate information from other sports, recent papers have included data from such diverse sports as sumo wrestling, track and field, and soccer.

Early Research

When discussing the impact of sports research on the discipline of economics as a whole, it seems appropriate to begin with Simon Rottenberg's (1956) article in *JPE*, "The Baseball Players' Labor Market." It can be argued that this article marks the true birth of sports economics. The author's purpose in writing the article is to explain the labor market of professional baseball using economic theory; he does not appear to care about generalizing his analysis to other labor markets. Although clearly important due to its seminal nature, Rottenberg's paper also serves as both a positive and a negative example to those who wish to produce scholarship that has an impact beyond the bounds of sports economics. First and foremost, the paper contains some extremely good economics, is well written, and is accessible to those without a deep knowledge of the institutions and other details of professional sports. Thus, it is an excellent example of sports-microeconomics research.

However, the author concentrates solely on professional baseball and loses an opportunity to show how his economic insights could be used to illuminate issues in other industries. Consider, for instance, Rottenberg's analysis of the reserve clause and the role of property rights in the distribution of labor resources, referred to as the invariance principle, which has been compared to Coase's (1960) influential ideas on property rights, transaction costs, and social costs. Although the publication of Rottenberg's analysis predates Coase's by several years, Rottenberg is rarely cited outside of sports economics, while Coase's has been called "the most widely cited article in the whole of the modern economic literature."[3] Although Coase's work is undoubtedly more important than Rottenberg's—a Nobel Prize is a fairly good indicator—one wonders whether "The Baseball Players' Labor Market" would be cited more often and would have had a larger impact on the discipline had the author generalized the results of his study to other labor markets.

After Rottenberg's paper, no further studies on the sports industry appeared in these two journals until El-Hodiri and Quirk (1971) and later Scully (1974). El-Hodiri and Quirk follows the general pattern of Rottenberg's study;

specifically, it is designed as a purely theoretical application of economics to the sports industry. In addition, the innovative aspect of this paper is based on the fact that economic theory had not been applied to sports in this way before, which is also similar to Rottenberg's paper. The first empirical sports study to appear in these two journals is Scully's, which is one of the best known and most cited sports research paper of all time.[4] The Scully study is the first to empirically measure the marginal revenue product of a MLB player. Although his analysis has been criticized by some (e.g., Krautmann, 1999) and improved by others (e.g., Zimbalist, 2001), Scully's methodology for measuring the value of an athlete is still in standard use. Note that this paper shares an important characteristic with Rottenberg and El-Hodiri and Quirk: All three papers are part of the sports-microeconomic literature since they add to the overall economics literature with novel applications of existing economic theory to an area that had not been previously analyzed, namely the sports industry.

El-Hodiri and Quirk and Scully were quickly followed by two other papers: Gwartney and Haworth (1974) and Hunt and Lewis (1976). The Hunt and Lewis study is similar to Scully's paper in that the authors use economic theory to empirically analyze MLB. However, among the papers surveyed here, the publication of Gwartney and Haworth's marks a turning point: Previous papers only attempted to apply accepted economic models to explain the sports industry, while Gwartney and Haworth illustrate how sports data can be used to empirically test economic hypotheses. Thus, this paper marks the birth of sportometrics in *JPE* and *AER*. Specifically, the authors use the racial integration of MLB to test Becker's (1957) theory as it applies to discriminating firms. As the authors state (p. 873), "this theoretical proposition is difficult to test in the real world." However, MLB during the 1940s and 1950s provides a "real world" test of the theory.

The 1980s saw the further development of sportometrics as researchers followed the lead of Gwartney and Haworth. Wittman (1982) illustrates how the institutions of the sports industry can inform economic theory concerning the existence of rules in markets, although his paper uses descriptive, rather than empirical, analysis. McCormick and Tollison's (1984) paper provides an excellent example of the advantages of sportometric research. The authors develop a theory of the market for crime, which considers both the supply and demand of crime simultaneously, concentrating on the impact of increasing the number of law enforcers on the number of arrests. To test their theoretical model, the authors use data on the Atlantic Coast Conference (ACC) college basketball tournament. Prior to 1979, the ACC tournament used two officials per game and then changed to three; thus, this exogenous change in the number of officials produces a natural ex-

periment. McCormick and Tollison argue that their ACC data (p. 224) "provide an economic laboratory with a history of accurate reporting of events . . . unlike most criminal data, which are generally held to be subject to various types of reporting errors." Importantly, the authors discuss the implications of their empirical results in terms of a more general increase in the number of law enforcers on arrests.[5]

Recent Research

Since 1990, there has been a veritable explosion of sports-related research in *AER* and *JPE*, with about a dozen papers appearing in these journals. This is a clear indication of the level of acceptance that sports research has achieved. For the most part, these studies are empirical papers, both sports-microeconomic and sportometric in nature, which use excellent sports industry data. These studies cover a wide variety of sports topics, including baseball (Schmidt and Berri, 2004; Goff, McCormick, and Tollison, 2002; Chapman and Southwick, 1991), college sports (Anderson and Ceslock, 2004; Goff, McCormick, and Tollison, 2002), hockey (Carlton, Frankel, and Landes, 2004), sumo wrestling (Duggan and Levitt, 2002), soccer (Chiappori, Levitt, and Groseclose, 2002; Szymanski, 2000), tennis (Walker and Wooders, 2001), track and field (Munasinghe, O'Flaherty, and Danninger, 2001), basketball (Brown and Sauer, 1993), and golf (Ehrenberg and Bognanno, 1990a&b). These recent publications have much to teach scholars who have an interest in influencing the literature beyond the confines of sports economics. Continuing the concentration on sportometric research, I briefly discuss several of these papers below.[6]

The quality of sports data often provides opportunities for testing economic theories when data from other industries are not up to the task. This is of obvious importance when encountering new theoretical developments that have not been supported by empirical testing. Chapman and Southwick (1991) use sports data to test the validity of the job-matching model of Jovanovic (1979). Although the model is intuitively appealing, empirical testing of this model is difficult due to the need for data that are highly disaggregated and that contain detailed information on performance and productivity; given these constraints, previous studies had provided inconclusive results. Since no other data are as disaggregated or contain as much information on worker productivity as do sports data, the authors' solution is to use the detailed, individual-level data of MLB. Given the advantage of using sports data, the authors are able to directly test whether the match between the manager and the team is a determinant of productivity (in terms of winning percentage), finding that the job match is significant after controlling for other determi-

nants. In addition, the authors are able to show that manager tenure and the probability of job separation are related in the way implied by the model. Thus, MLB data give empirical support to the job-matching model.

Munasinghe, O'Flaherty, and Danninger (2001) creatively use several sources of track and field data to test for the effects of globalization and technological change on the rate of change of records. More importantly, the authors persuasively argue the merits of using track and field records to measure technical progress. Using statistical and economic theory to establish a model of discrete changes in track and field records, the study's empirical results indicate that the impact of technological change dominates globalization. The paper also makes a clear statement concerning the value of the research to economics as a whole. The authors state (p. 1146) that the major contribution of the paper is "to bring the theory of records to the attention of the economics profession," and they discuss how records theory can be applied to other research questions. In addition, they point out that their methodology can be applied to other studies on technological change and globalization (p. 1134):

> Records are a natural way to look at discrete changes by optimizing agents. . . . Economists are interested in how globalization and technological change affect a host of discrete decisions: how often workers move or lose their jobs, how often firms start up or shut down, how often comparative advantage in different products shifts, and how often new versions of software are introduced. For these questions, records are more relevant than performances.

Note that the quote refers to the interests of economists and how available sports data (i.e., records) correspond to that interest, clearly stating the value of their work.

Szymanski (2000) continues a long history of testing for discrimination using sports data begun by Gwartney and Haworth. The sports industry has provided opportunities to test for the existence and the source of wage discrimination due to the availability of detailed data on performance, thus validating the basic arguments in favor of sportometrics. The author's innovation in this paper is in devising a test for employer discrimination that does not rest on the assumption that all information on productivity is known; instead, his test is based on an assumption of a competitive labor market. On the basis of this assumption, the results give evidence of employer-based discrimination against black soccer (football) players and imply that competitive forces may not drive out employer discrimination. However, the author is careful not to stress the last point too strongly, due to the possibility that noncompetitive forces are at work in the output market of English soccer. Like previ-

ous examples, he details why sports can be viewed as a laboratory that produces interesting data and shows how his results inform microeconomic theory on racial discrimination.

Kahn (2000: 91) contends that "while it would be unwise to extrapolate too strongly from the labor market experience of sports, evidence on a particular labor market should not be discounted just because the market has a high profile." Perhaps Szymanski is heeding Kahn's advice when not stressing the more general implications of his results, or it may just be that an editor or referee would not allow a broader interpretation. However, Szymanski could have made a stronger case for the fact that his evidence suggests that it may not be easy for competition to drive out employer discrimination and that employer discrimination may be more widespread than neoclassical economists think; that is, if there exists any market power, then there is room for employers to indulge discriminatory tastes if they have them. Szymanski's most valuable contribution is his methodology, which is likely the main reason this paper was published in *JPE*. Although not explicitly stated in the paper, Szymanski's methodology could be used to test for employer discrimination in other industries, as long as data are available on the racial characteristics of employees and total salaries.

Goff, McCormick, and Tollison (2002) use data from MLB and college basketball to analyze the impact of racial integration on firm behavior. The authors place their study in the context of the economics of innovation, treating racial integration in sports as a process of teams taking advantage of an increased pool of talent. The hypothesis tested is whether strong teams or weak teams were the first to integrate. Their results suggest that teams with better won/loss records tended to integrate first, an outcome that the authors state is due to managerial efficiency. An interesting aspect of this study is its empirical simplicity; the paper presents results from OLS estimations with few independent variables. Clearly, this paper was not published in *AER* due to its empirical complexity, proving that sports researchers need not perform statistical magic to publish in the top journals.[7] However, the paper could have been improved by the inclusion of a discussion generalizing these results. Similar to Szymanski, perhaps the authors chose not to make the stretch or the editor did not allow it.

Experimental economics applies laboratory methods of inquiry to the study of economics. In this rapidly growing field, researchers design experiments in which the behavior of individuals is observed under controlled conditions. Game theory is often tested in such controlled environments; in fact, empirical testing of game theoretic models is based almost solely on experiments. Unfortunately, these models have not always been consistent with empirical evidence from experiments using human subjects. How-

ever, the laboratory of the sports industry has provided opportunities for creative researchers to test these models in the real world using nonexperimental data. In order to test whether agents behave as game theory predicts, Chiappori, Levitt, and Groseclose (2002) use data on penalty kicks from French and Italian first division soccer league games and Walker and Wooders (2001) use data on serves in professional tennis matches from the 1970s to the 1990s. In these two studies, sports data validate the propositions of the respective theoretical models. If the success of these recent attempts to use nonexperimental sports data is any indication, "experimental sports-economics" may well be a growth industry.

Conclusion

This brief review of sports-related literature in *AER* and *JPE* shows that research containing innovative methodologies and data has been published in top economics journals. While there is every reason to expect that this will continue to be true into the foreseeable future, expanding beyond these two journals gives a clearer picture of the status of sports economics as a field. The number of published studies on sports in all economic journals increased from less than five per year in the 1970s to an average of thirty per year in the 1990s (Kahane, Idson, and Staudohar, 2000). In addition, during the 1980s and 1990s, sports research appeared in top-tier journals such as *Quarterly Journal of Economics*, *Journal of Economic Literature*, *Journal of Economic Perspectives*, *Review of Economics and Statistics*, *Economic Inquiry*, *Economics Letters*, *Southern Economic Journal*, *Journal of Human Resources*, *Journal of Labor Economics*, and *Industrial and Labor Relations Review*. In 2000, sports researchers even got their own academic journal, the *Journal of Sports Economics* (*JSE*), which can be interpreted as a sign that the demand for and supply of research by sports economists is now large enough to necessitate a field journal.

It is not surprising that some sports economists find the level of respect for their work unacceptable. No doubt many academics wish their chosen field were afforded greater respect. This issue is more profound in areas that may seem trivial to other scholars. Some sports economists feel they face prejudices against the value of their work, which impacts their ability to influence the discipline. The brief literature review provided in this chapter shows that any prejudices do not compose a significant barrier to publishing sports-related research. On the contrary, sports research can be published in top-quality economics journals, whether it is a sports-microeconomic or a sportometric study. Characteristics of high-quality empirical research in any discipline include innovative methodologies, ex-

cellent data, and well-crafted arguments for the value of the scholarship. Sports researchers who aspire to any level of scholarship would be well advised to include all of these in their papers.

In summation, consider the advantages the sports economist has over other economists. First, there is the quality of the data and the relative ease with which it is obtained. For example, Kahn (2000: 75) considers the data available to a typical labor economist and to a sports economist—who happens to study labor issues—and concludes the sports economist has access to data that "are much more detailed and accurate than typical microdata samples such as the Census or the Current Population Survey." Clearly, the availability and quality of sports data have positively affected the productivity of sports researchers; in addition, this advantage will continue to generate opportunities for sports researchers in the future.[8] Second, many academics, including sports economists, have problems communicating with and influencing the decisions of industry practitioners. However, sports economists are in a better position than other economists, since sports economists are in some sense "closer" to the practitioner. This is a result of the existence of more and better data on the sports industry than on other industries. Third, there is the interest that sport engenders in the population at large and, more importantly, in our students. So, the next time you feel disrespected for your work, instead of getting angry, pity those economists who did not have the foresight to study the sports industry.

Notes

1. Although it is not the focus of this chapter, I would be remiss if I did not mention the impact that sports economics has had on the teaching of economics, especially at the undergraduate level. It could be argued that sports economics has had its largest and most important impact in the classroom. This can be seen in the proliferation of sports economics courses at universities throughout the world. In addition, examples from the sports industry are commonly used to explain and reinforce economic concepts in theory courses.

2. Papers published in *AER* and *JPE* on betting markets are not considered here, although the use of data from betting at racetracks and other sporting venues dates back at least as far as Weitzman (1965). See Jullien and Salanie (2000) for a review of this literature.

3. This quote can be found in Coase's biography on the Nobel Prize website (nobelprize.org). The online edition of the *Concise Dictionary of Economics* (www.econlib.org/library/CEE.html) reports that Coase (1960) was cited 661 times between 1966 and 1980. As of October 16, 2004, the Social Science Citation Index reports that Rottenberg (1956) has been cited 69 times.

4. As of October 16, 2004, the *Social Science Citation Index* reports that Scully (1974) has been cited 105 times.

5. It could be argued that the theoretical papers of Lazear and Rosen (1981),

Rosen (1986), and Dixit (1987) on tournament theory qualify as sports-related research, especially since these papers have spawned an extensive literature designed to test this theory with sports data. A similar argument can be made for Rosen's (1981) theoretical treatment of superstars. However, these papers are additions to microeconomic theory and make no attempt to analyze the sports industry or to show how sports data could be used to test this theory. See Szymanski (2003a) for a survey of tournament theory as applied to the sports industry.

6. Again, I apologize to those scholars whose papers are not discussed here; their exclusion in no way implies that they are inferior to the ones chosen.

7. It could be argued that reputation played a part in this paper being published in *AER*. For instance, Robert Tollison has an impressive curriculum vitae and has published more than a dozen articles in *AER* and *JPE*. Even if reputation has something to do with whether work is published in these top journals, it does not take away from the importance of the research.

8. Although not all sports data can be accessed easily, much is available on the Internet. For instance, if one is looking for some data, one might try Rodney Fort's website (users.pullman.com/rodfort/), which contains a wealth of information on several different sports.

Part II

Review and Analysis of Specific Sports

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