

## The Size and Scope of the Sports Industry in the United States

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### Abstract

We estimate the economic scope of the sports industry in the United States. Drawing on a variety of data sources, we investigate the economic size of sport participation, sports viewing, and the supply and demand side of the sports market in the United States. Estimates of the size of the sports industry based on aggregate demand and aggregate supply range from \$44 to \$73 billion in 2005. In addition, participation in sports and the opportunity time cost of attending sporting events are important, but hard to value, components of the industry.

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# Estimates of the Size of the Sports Industry in the United States

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## Abstract

We estimate the economic scope of the sports industry in the United States. Drawing on a variety of data sources, we investigate the economic size of sport participation, sports viewing, and the supply and demand side of the sports market in the United States. Estimates of the size of the sports industry based on aggregate demand and aggregate supply range from \$44 to \$73 billion in 2005. In addition, participation in sports and the opportunity time cost of attending sporting events are important, but hard to value, components of the industry.

## **Introduction**

Sport is a complex, multi-faceted activity encompassing modern spectacles like the Summer and Winter Olympic games and informal pick-up games on urban basketball courts; a recreational jogger, a runner in the Boston Marathon – a competition with thousands of participants -- and people watching the Boston Marathon on television all participate in sport in some way.

Academic research on sport can be found in many disciplines, spanning the humanities, social sciences, laboratory sciences, law and business. In this paper, we investigate the size of the sports industry in the United States from an economic perspective. Relatively little attention has been paid in the past to estimating the economic scope of the sports industry, perhaps because of difficulties formulating an appropriate economic definition of sport. A sizable literature documenting the economic scope and economic impact of specific sports or sporting events, already exists, in part because of the ease of defining the limits of events like a golf tournament or season of professional baseball.

The first step in the process of estimating the economic scope of the sports industry is to define sport, a topic that lies outside the discipline of economics. A number of possible definitions have been proposed. Sociologist Jay Coakley (2003) characterized sport as activities involving gross motor skills, competition, and an organized set of rules. Economist Rodney Fort (2006) qualifies Coakley's competition criteria to include only competition based on objective scoring and further restricts sport to activities only using simple devices, like bats and balls, or no devices at all. These definitions, along with many others, like the criteria that some participants must receive a financial reward for success suffer from the limitation that, in the immensely diverse realm of human behavior, many sport-like activities exist. For example, hot dog eating and bass fishing would both appear to qualify as a sport under these definitions.

One key issue in defining sport involves identifying criteria that separate sport from games of skill like chess or poker and from recreational activities like dancing, hiking, fishing, and gardening. A secondary issue involves identifying criteria that appropriately define competition in a way to distinguish sport from exercise. For example, running has a competitive dimension but jogging does not. Note that weightlifting is an Olympic sport, bodybuilding is a

professional sport, and competitions based on athletic performance on fitness equipment like stationary rowing machines, elliptical trainers and stationary bicycles exist, blurring the already murky distinction between exercise and sport.

Ultimately, defining sport in a way that makes the estimation of the economic scope of the sports industry a straightforward process lies beyond the scope of this paper. We propose a non-existence theorem: there does not exist a definition of sport that identifies a set of activities that all relevant parties will agree to be appropriate. Given this non-existence, we will proceed by making arbitrary, but defensible decisions about which activities constitute sport, exercise, recreation, and games of skill. Those better equipped to answer this difficult question are invited to extend this research, or show that the results in this paper are not robust to alternative definitions.

### **An Economic Definition Sport**

The second step in estimating the economic scope of the sports industry is to define the industry in economic terms. Several frameworks for defining the sports industry have been proposed; much of this research emerged from Europe, where government policymakers took an interest in estimating the overall economic importance of sport several decades ago. Gratton (1998) discusses a general method for estimating the economic scope of the sports industry, and points out that economic interest in sport extends well beyond the boundaries of professional sports. Gratton's (1998) approach uses existing national income and product accounting methods, essentially combing through existing national accounts data to identify sport-related sub-industries and aggregating across them. In related research, Davies (2002a, 2002b) adopts

one national accounts approach, value added, to estimate the contribution of sport to the local economy in Sheffield, England.

While a national income and product accounting approach has some appeal, because of the well-developed methodology and the existence of rich set of frequently updated accounts for many developed economies, it also has some weaknesses. First, on the national product side the analyst is at the mercy of the existing production classification system. The North American Industrial Classification System (NAICS), and its predecessor the Standard Industrial Classification (SIC) System, do not identify the sports industry. We discuss the details of this problem below. The problem is that the sports industry makes up only a fraction of the activity in any existing industry classification, leading to an over estimate of the size of the sports industry from national product accounts. Second, on the national income side, the published spending data are not detailed enough to identify the size of consumer spending on sports, no matter how broadly defined. Third, in the US all levels of government are involved in the provision of sports facilities and other important activities on the supply side of the sports market, and national income and product accounts do not contain detailed estimates of government spending on many specific items. Fourth, much of the activity in the sports market involves non-traded goods and labor inputs not valued at market prices. For example, the labor inputs provided by intercollegiate athletes are not valued at market prices (Brown, 1993). Fifth, sports markets feature both significant consumer surplus and non-market consumption benefits that are not reflected in national income and product accounts (Alexander, Kern and Neil, 2000). Sixth, attending sporting events, following them through various media, and participating in sport takes a considerable amount of time and generates opportunity costs that are not valued in national income and product accounts.

Given these problems with a pure national income and product accounting based exercise, we adopt a more holistic approach. We use data from a wide number of sources and use these data to develop estimates of the economic value of sports from a number of different perspectives. For the purposes of this paper, we define the sports industry as having three primary components:

1. Activities involving participation in sport
2. Activities involving attendance at spectator sporting events
3. Activities involving following spectator sporting events through some media.

While a number of other sport-related activities are not included in this list, all three items can be thought of as part of sport. All three are also easily defined and observed, which will prove useful when estimating the economic scale of these activities. We further assume that any individual household or firm engaged in an activity that falls into one of these three areas is participating in the sports market. We define the sports industry as all producers of the goods and services that fall under these three areas.

We recognize that each component contains elements that could be defined as recreation, exercise, or games of skill. For example, including participation in sport means that some activities that could be defined as exercise, like aerobics or walking, will be included in our definition. Including spectator sports means that auto racing, figure skating, and other such activities will be included in our definition. The most difficult choice we face is the inclusion or exclusion of activities like hunting, fishing, kayaking, horseback riding, sailing, and hiking. These are popular activities that attract many participants, and require both considerable time and expensive equipment. Many specific activities in this group are recognized Olympic sports or

have expert professional participants. However, we choose to exclude these activities from our definition of the sports market because we believe that they fall under recreation and not sport.

Given these definitions, this paper examines the scope of the sports industry by documenting the extent of individual participation in these activities and estimating of the value of the economic activities in the United States that into one of these three groups. Note that we focus on the United States in this paper because we are familiar with the economy of the United States, and the large number of data sources available to document the economic activities that take place in the United States. The focus of this paper on the sports industry in the United States is simply a matter of convenience.

### **Individuals' Participation in the Sports Market**

Individuals can participate in the sport market in three ways: by participating some sport, by attending a sporting event, or by watching or listening to a sporting event on television, radio, or the internet. Each generates direct and indirect economic activity. All three take time, and economic theory tells us that time use has an opportunity cost. In this case, the opportunity cost of individual participation in sport is the value of the next best opportunity for an individual. For consumers of sport, this opportunity cost can be valued in terms of forgone wages or earnings. Furthermore, participating in sport requires equipment, fees, and potentially travel, all of which generate economic activity. Attending a sporting event involves purchasing tickets, travel and perhaps other purchases like food and souvenirs. Watching or listening to sporting events requires equipment, in the form of televisions, radios or computers, as well as subscriptions to broadcast services. Since all of these economic activities increase with the number of

participants, documenting the number of participants is an important indicator of the scope of the sports market.

More importantly, individuals' participation in the sports market generates significant economic benefits beyond direct and indirect economic activity. Individuals derive satisfaction, or utility, from participation in the sports market, which has economic value. In the jargon of economics, individuals' participation in the sports market produces consumption benefits. These consumption benefits are not bought and sold like tickets, but they are important when assessing the overall scope of the sports market. Although placing a dollar value on sport related consumption benefits is beyond the scope of this paper, it is safe to say that the value of these consumption benefits rises with the number of participants in the sports market.

### *Sport Participation*

There are a number of sources of data on the number of individuals who participate in sport in the United States. The National Sporting Goods Association (NSGA) periodically produces estimates of the number of participants in sport in the United States. The NSGA participation estimates are based on a national mail survey sent out to about 300,000 households. Table 1 shows NSGA's estimates of the reported number of participants for a selected group of sports in the United States for the most recent year available, 2005.

Based on the information on Table 1, walking is by far the most popular sport, in terms of total participation. This is to be expected, because walking is not a costly activity. Participating in walking requires relatively little equipment, few fees, and does not have to involve much travel, since many people can walk simply by stepping outside their home or workplace. Because of the low participation costs, walking also generates relatively little economic activity.



The other sports on Table 1 generate more economic activity per participant than walking because they require more equipment, membership fees, and travel costs to participate in.

**Table 1: Estimated Participants in Sport, 2005**

<b>Sport or Activity</b>	<b>Number of Participants</b>
Walking	87,500,000
Swimming	56,500,000
Bowling	44,800,000
Health Club Membership	37,000,000
Bicycling	35,600,000
Weightlifting	32,900,000
Running/Jogging	29,200,000
Basketball	26,700,000
Golf	24,400,000
Baseball	14,600,000
Soccer	14,000,000
Softball	12,400,000
Volleyball	11,100,000
Inline Skating	10,500,000
Tennis	10,400,000
Mountain Biking	9,200,000
Downhill Skiing	6,400,000
Martial Arts (2004)	5,400,000
Snowboarding	5,200,000
Ice/Figure Skating (2003)	5,100,000
Cross Country Skiing	2,600,000
Ice Hockey	2,600,000

A simple total of the number of participants reported on Table 1 points out an important limitation of these estimates as an indicator of economic activity. Table 1 suggests that over 484 million individuals participated in sport in 2005. Since the US population was about 297 million, the methodology that generated these estimates involves counting of some individuals multiple times. The survey question asks the respondents to list each sport participated in more than once in the past year, and to list all the sports that every member of the household over the age of seven participated in more than once during the past year.

Clearly, any given individual can easily participate in both bowling and golf, so in one sense this accounting method is appropriate for assessing the scope of the sports industry. The

economic activity associated with participation in any sport also depends on the intensity of participation. For example, the participation count for golf on Table 1 may include a person who borrows a set of clubs and plays a single round and a person with a country club membership who plays three rounds of golf a week and takes a vacation to play golf every year. The total economic scope, in terms of the direct economic activity, opportunity cost, and consumption benefits, generated by these two golfers differs significantly. To the extent that heterogeneity in the intensity of participation in sport exists, the participation figures on Table 1 do not provide much information about the economic scope of sport participation in the U. S.

A measure of participation in the sports market that accounts for intensity of use will be useful for addressing this problem. We use the Behavioral Risk Factor Surveillance System (BRFSS) for evidence on sport participation that accounts for intensity of use. The main element of the BRFSS is the Behavioral Risk Factor Surveillance (BRFS) survey, a nationally representative survey of the adult population of the United States conducted by the Centers for Disease Control and Prevention (CDC). The BRFS collects uniform state specific data on health prevention activities, including physical activity. The BRFS employs a telephone survey, meaning that individuals must live in a household with a telephone to be eligible for the survey.

The 2000 BRFS contained detailed questions about participation in sport. This includes questions that ask respondents to list the sport that they spent the most time participating in, given that they reported participating in any sport. The specific BRFS question was: *What type of physical activity or exercise did you spend the most time doing during the past month?* Individuals who answered this question are not just casual, once or twice a year, participants in sport. So the sport participants identified by this survey question probably generate significant economic activity while participating.

Since the BRFS is a nationally representative sample, the results of this survey can generate estimates of the total number of participants in various sports. Table 2 shows the estimated number of participants for a group of sports from the 2000 BRFS. Many other types of physical activities, including gardening and housework, were reported as physical activities in the 2000 BRFS, but we consider this to be the relevant group of sports for this analysis.

**Table 2: Estimated Sport Participants, 2000  
Based on BRFS Survey**

Sport	Estimated Number of Participants		
	Lower bound	Mean	Upper Bound
Walking	68,600,000	69,301,784	70,000,000
Running/Jogging	12,500,000	12,901,119	13,300,000
Weightlifting	7,118,775	7,396,304	7,673,832
Golf	4,787,312	4,982,688	5,178,063
Bicycling	4,588,754	4,791,467	4,994,179
Aerobics	4,189,563	4,355,448	4,521,333
Basketball	3,276,901	3,461,372	3,645,844
Health Club Workout	2,375,871	2,510,246	2,644,621
Swimming	2,216,229	2,356,134	2,496,039
Calistenics	2,054,979	2,208,816	2,362,652
Bike or Rowing Machine Exercise	1,493,113	1,622,729	1,752,346
Tennis	1,072,147	1,171,802	1,271,457
Soccer	878,774	1,010,848	1,142,922
Martial Arts	570,918	649,406	727,895
Skating (Ice and Roller)	544,010	633,485	722,960
Bowling	543,637	611,725	679,813
Volleyball	456,615	531,830	607,045
Snowskiing	315,119	373,660	432,201
Raquetball	298,842	359,900	420,958
Boxing	167,959	208,423	248,887
Touch Football	133,717	179,878	226,039
Waterskiing	120,486	158,624	196,761
Squash	57,243	101,219	145,194
Surfing	57,243	101,219	145,194
Badmiton	29,427	50,090	70,752
Table Tennis	20,818	38,056	55,295
Handball	8,264	18,249	28,234
Softball	<u>4,339</u>	<u>8,203</u>	<u>12,067</u>
<b>Total</b>	<b>118,481,056</b>	<b>122,094,722</b>	<b>125,702,581</b>

Again, we interpret the participation totals on Table 2 as reflecting frequent participants in these sports and the totals on Table 1 as reflecting both frequent and infrequent participants. The participation totals on Table 1 and 2 show some consistencies. Walking has the most participants on both tables. About 70 million people, just under 25% of the population, reported walking frequently for exercise the BRFSS in 2000. About 87.5 million people, just under 30% of the population, reported walking for exercise either frequently or infrequently in 2005. The biggest difference between these two tables is the smaller number of frequent participants in all the sports except walking. For example, while only 2.3 million people reported swimming frequently for exercise, 56.5 million people reported swimming in the NSGA survey on Table 1 that includes infrequent participants. This pattern can be seen in the participation counts for all the other sports.

In summary, the analysis of these participation data suggest that in any year over 50% of the US population participate in some sport regularly, and a far larger number of people participate in some sport occasionally. By either measure, individual participation in sport in the US is significant, and this participation generates a considerable amount of economic activity.

#### *Attendance at Spectator Sporting Events*

The National Sporting Goods Association (NSGA) also compiles total spectator attendance for a number of professional and amateur sports. Table 3 contains total attendance for selected sports leagues in 2005. Professional baseball clearly draws the most spectators of any sport in the United States. Over 74 million people attended a Major League baseball game in 2005, and an additional 15.6 million attended a minor league baseball game. In part, this is because there are many professional baseball teams at the major and minor league level, and

these teams play relatively long seasons. This provides consumers with many opportunities to attend baseball games.

**Table 3: Estimated Total Attendance at Sports Events, 2005**

Sport	Total Attendance
Major League Baseball	74,385,100
NCAA Football	43,486,574
NCAA Men's Basketball	30,568,645
National Basketball Association	21,369,078
National Hockey League (2004)	19,854,841
National Football League	17,011,986
Minor League Baseball	15,636,000
NASCAR Winston Cup Series	6,300,000
Minor League Hockey	6,179,000
Horse Racing	5,979,000
Professional Rodeo	5,429,000
NASCAR Busch Series	3,911,000
Professional Golfers Association	3,200,000
Arena Football League	2,939,000
Major League Soccer	2,900,715
Minor League Basketball	2,625,000
Professional Tennis	1,970,000
Professional Boxing	1,931,000
IndyCar Racing	1,914,000
National Hot Rod Association	1,835,000
NASCAR Truck Series	1,708,000
Champ Car racing	1,490,000
Professional Bowling Association	1,310,000
Women's National Basketball Association	1,087,000
Professional Lacrosse (MLL, NLL)	1,019,000
Major Indoor Soccer League	992,000

The next two largest sports on Table 3, in terms of total attendance, are college football and college basketball. These totals reflect college attendance at all levels. Again, there are hundreds of colleges and universities with football and men's basketball teams, so this large total attendance is to be expected, given the ample opportunities to attend these sporting events. Some readers might be surprised to see that the National Football League (NFL) total attendance is smaller than the other major professional sports leagues – including hockey – and smaller than NCAA football and basketball. However, the NFL plays a relatively short 16 game regular

season schedule and, as we will soon see, focuses on television viewing as its primary means of public exposure. NASCAR attendance is broken out into Winston Cup, Busch Series, and Truck Series on Table 3. Total NASCAR attendance was just under 12 million in 2005, and when the other car racing sports are added to this, total attendance at all professional racing in 2005 was over 17 million, exceeding total attendance in the NFL. But total professional and NCAA football attendance, including arena football, at over 63 million in 2005, dwarfs total professional racing attendance.

Total attendance at the sports events listed on Table 3 was just over 277 million in 2005. This total includes many individuals who bought tickets to multiple games, including season ticket holders who go to many games in one sport every year and people who attend many different sporting events every year. Still, 277 million tickets sold in 2005 is a large number compared to the total US population of 296.6 million. This represents a significant amount of economic activity, both in terms of spending on tickets, spending on other related goods and services like travel, and the opportunity cost of the time spent attending sporting events.

Given these attendance estimates, the opportunity cost of the time represented by attendance at spectator sporting events is large. Estimating this opportunity cost requires an estimate of the amount of time spent by individuals attending spectator sporting events. One source of detailed information about how much time consumers spend attending spectator sporting events is the American Time Use Survey (ATUS). The ATUS is a comprehensive survey of time use based on individuals who also participated in the Current Population Survey (CPS). The ATUS contacts a sample from outgoing rotations of the CPS and, in a single computer assisted telephone survey, asks one household member to describe every activity undertaken in a single day, called the reference day, sequentially. Each minute of the reference

day is accounted for in the survey. Survey members are selected so that reference days are representative of the average week, and sample weights are available to make the results generalize to the entire U.S. population. See Hammermesh, et al. (2005) for a detailed description of the ATUS.

The ATUS lexicon contains detailed information about time spent attending 33 different spectator sporting events, from aerobics to wrestling, as well as time spent travelling to spectator sporting events; the travel time data are not detailed enough to generate estimates of time spent travelling to individual sporting events, so we do not consider that time cost here. Based on the ATUS survey data, the average time per day that an American spends in activity  $j$ ,  $T_j$ , for given sample weights  $w_i$  for each individual  $i$  and estimate of time spent by individual  $i$  in activity  $j$ ,  $T_{ij}$  can be estimated by

$$T_j = (\sum_i w_i T_{ij}) / (\sum_i w_i)$$

Total time per year that Americans spend can be estimated by  $365 \times T_j \times (\sum_i w_i)$ . Although the ATUS contains estimates of time spent attending 33 different sporting events, only five events has an estimated average time spent per year statistically different from zero in the 2005 survey: time spent attending baseball, basketball, football, and soccer games, and time spent attending car races.

Table 4 summarizes the estimates of total time spent per year and average time spent per person per year attending sporting events in 2005 from the ATUS for the five statistically significant spectator sporting events. The estimated total hours on Table 4 are expressed in hundreds of thousands of hours, so the estimated total amount of time spent by Americans spent watching baseball games in 2005 was 186 trillion hours, or about 23 billion eight hour days.

**Table 4: Estimated Annual Hours Spent Attending Spectator Sporting Events in 2005 (000,000s)**

Activity	Total Hours	Std Dev	Lower 95% CI	Upper 95% CI	Average per Person
Watching Baseball	186,200	50,800	86,600	286,000	2.21
Watching Basketball	261,100	53,400	156,000	366,000	3.10
Watching Football	200,200	42,000	118,000	283,000	2.38
Watching Soccer	73,480	24,300	25,800	121,000	0.87
Watching Car Racing	76,210	25,200	26,800	126,000	0.91
<i>Sports Total</i>	<i>797,190</i>				<i>9.48</i>
Watching TV	78,780,000	1,070,000	76,700,000	80,900,000	936.68
Listening to Radio	803,200	81,900	643,000	964,000	9.55

While the total hours estimates appear large, there are 8,736 hours in a year. The final column of Table 3 puts the estimates in better perspective. In 2005, the average American spent about nine and a half hours attending spectator sporting events. The ATUS data does not contain sufficient detail to determine time spent by level of play in these sports, so that estimate contains time spent attending both little league and major league games. The final two rows put the average time spent estimates in the context of other leisure activities. The average American spent over 936 hours watching television in 2005, one hundred times more time than was spent attending spectator sporting events; about the same amount of time was spent attending sporting events as listening to the radio. Of course, a significant fraction of that television watching and radio listening involved sports, as will be shown in the next section.

In addition to the opportunity cost of time, the 277 million people who attended pro and NCAA sporting events in 2005 generated a substantial amount of direct and indirect economic activity. Tickets were purchased for each of these events, along with parking, concessions, and souvenirs. For those spectators who traveled long distances to attend a sporting event, attending the event also generated travel spending, including hotels and meals. An estimate of the indirect



economic impact of this spending could be generated from an appropriate input-output model, but that exercise is beyond the scope of this paper.

### *Viewing and Listening to Mediated Sport*

Spectator sports play an important role in print and broadcast media. Almost every daily newspaper in the country has a sports section and sports broadcasts appear on many local and national television and radio stations across the country. According to the *Vital Statistics of the United States, 2005*, the total multimedia audience in the United States was 215,800,000. This implies that, of the 295,194,000 people counted as the resident population of the US in 2005, 73% of them had access to some form of media, including newspapers, television, radio and internet. The National Sporting Goods Association reports estimated television viewing audiences for a number of professional sports leagues. Unfortunately, estimated television viewing audiences for NCAA football and men's basketball are not readily available. Table 5 shows the estimated television audiences for the professional sports leagues tracked by the NSGA in 2005.

The National Football League has the largest television viewing audience of any US professional sports league. The 105 million person NFL television audience is over one third of the total US population in 2005. More than one person in every three watched NFL football in 2005. Following the NFL are Major League Baseball and the National Basketball Association, two other traditionally popular professional sports leagues.

One interesting feature on Table 5 is the relatively large TV audiences for professional golf (about 38 million viewers) and tennis (about 26 million viewers), and the 21.5 million person TV audience for horseracing, a sport widely perceived to be in decline in the US. The

estimated television audience for these sports may reflect the popularity of a few events, like the four “Major” championships in golf, the United States Open and Wimbledon in tennis, and the three “Triple Crown” races in horseracing. The popularity of these sports on television may not have the same durability of the NFL, MLB and the NBA, which probably have a larger day to day following. Also, note that NASCAR has a very large estimated television audience; the total audience for the three NASCAR series is over 85 million, which placed it at a similar level to the “big three” professional sports. A caveat is that adding those three estimated television audiences may lead to a lot of double counting, as many of the people in the Winston Cup series television audience are probably in the Busch series and Truck series audience as well.

**Table 5: Estimated Total Television Viewing Audiences, 2005**

<b>Sport</b>	<b>TV Audience</b>
National Football League	105,874,000
Major League Baseball	76,744,000
National Basketball Association	60,877,000
NASCAR Winston Cup Series	45,588,000
Professional Golfers Association	37,899,000
NASCAR Busch Series	27,981,000
Professional Tennis	26,187,000
Horse Racing	21,560,000
IndyCar Racing	19,366,000
Professional Rodeo	18,862,000
Professional Boxing	18,094,000
Arena Football League	17,094,000
National Hockey League	13,870,000
Professional Bowling Association	13,470,000
Women's National Basketball Association	12,220,000
NASCAR Truck Series	12,073,000
Major League Soccer	10,010,000
Minor League Baseball	9,668,000
National Hot Rod Association	7,900,000
Minor League Basketball	7,126,000
Champ Car racing	6,678,000
Minor League Hockey	3,315,000
Professional Lacrosse (MLL, NLL)	3,103,000
Major Indoor Soccer League	2,338,000

*Source: National Sporting Goods Association (NSGA)*

The figures on Table 5 point out the problems associated with adding up the estimated television audiences for individual sports to estimate the total sport television audience. The NSGA estimates of total television size do not indicate how long an individual spends watching each sport in the average week or month, so we have no idea of the intensity of viewing. Also, unlike live game attendance, the actual amount of time spent “watching” a sporting event on television is difficult to measure. A fan watching a sporting event on television could be doing a number of things at the same time. For example, while writing this section of the paper, we had the live television coverage of the Tour de France on in the background. Was that time spent watching sports on television, or working?

In any event, watching sports on television generates the smallest direct and indirect economic activity of any of the activities discussed so far. Watching sports on television requires the purchase of equipment (a television) and may also require a subscription to cable or satellite programming packages. Beyond this, the primary economic activity generated by watching sports on television comes from the consumption benefits, as well as advertizing and sponsorship.

Aggregate estimates of the number of people who listen to sporting events on the radio in the US are difficult to find. According to the *Statistical Abstract of the United States*, the estimated radio listening audience in 2005 was about 181 million people, a total that is not much smaller than the television audience. Anecdotal evidence suggests that quite a bit of sports programming is available on radio, perhaps as much as is available on television for the NFL, MLB and the NBA. So the opportunity cost of time for this activity may be a relatively large fraction of the opportunity cost of watching sports on television.

Determining the amount of sports viewing done over the internet is also difficult to estimate. The *Statistical Abstract of the United States* reports that about 138 million people had access to the internet 2005. In one recent survey, the fraction of surveyed internet users who reported “checking sports scores or information” was larger than those reporting downloading music, although smaller than those using the internet for email. In any case, the amount of time spent following sports on the internet is proportionate to overall internet use, which is growing rapidly. Furthermore, much of the sport related internet use may take place at work, where many people have internet access, unlike sports viewing on television which takes place primarily at home or in bars and restaurants.

### **Estimating the Value of Economic Activity in the Sports Market**

The previous section documented the number of participants in sport, the number of spectators attending sporting events, time spent attending these events, and the number of individuals who watch and listen to sport through various media. This type of participation is one indicator of the scope of the sport industry. A second type of indicator of the scope of the sports industry is the dollar value of the direct and indirect economic activity that takes place in the sports market.

Economic theory tells us that markets are composed of two distinct parts: suppliers who make and sell goods and services and demanders who purchase and consume goods and services. This distinction suggests two alternative methods for estimating the value of economic activity in the sports market. Either add up the value of output or revenues of all of the producers in the sports market, or add up the total spending of all consumers in the sports market.

How much direct economic activity, in terms of dollar value of goods and services produced and consumed, takes place in the sports market? The answer to this question is surprisingly difficult to determine. We can easily find out the total sales of the hotel industry for any recent time period (\$170,767,400,000 in 2005), and have some idea of the amount of economic activity that takes place in the market for hotel rooms in terms of the dollar value of sales made by all businesses selling short term accommodations. This supply side estimate is readily accessible because the accommodations industry has been defined in the existing industrial classification system used a by the United States Census Bureau to quantify economic activity; but we cannot find out the total sales of the sports industry so easily. The sports industry is not defined by any government agency that collects statistical data on economic performance in the United States. Because of the lack of a commonly accepted definition of the sports industry, any measure of the value of the economic activity in the sports market must be cobbled together from various sources.

In this section, we develop estimates of the dollar value of the sports industry in the United States from both the supply side of the sports market, and the demand side of this market.

#### *Supply Side Estimates of the Sports Market*

The US Census bureau groups individual firms into industries based on the North American Industrial Classification System (NAICS). The NAICS includes the Arts, Entertainment and Recreation industry (NAICS 71) that contains a number of sub-industries that are clearly part of the sports market, based on the definition of the sports industry offered above. These include: Spectator Sports Teams and Clubs (NAICS 711211); Racetracks (NAICS 711212); Other Spectator Sports (NAICS 711219); Golf Courses and Country Clubs (NAICS

71391); Skiing Facilities (NAICS 71392) Fitness and Recreation Centers (NAICS 71394); and Bowling Centers (NAICS 71399). The NAICS also identifies Promoters of Performing Arts, Sports and Similar Events (NAICS 7113) and Agents and Managers for Artists, Athletes, Entertainers and Other Public Figures (NAICS 7114), but these sub-industries appear to include activities outside sports. This group of sub-industries in NAICS Industry 71 account for a large fraction of the businesses on the supply side of the sports industry. One important exception is manufacturers of sports equipment. These firms are primarily grouped in Sporting and Athletic Goods Manufacturing (NAICS 33992).

There are several other sport related sub-industries in the NAICS. These include Sporting Goods Stores (NAICS 45111) and Sporting and Recreational Goods and Supplies Merchant Wholesalers (NAICS 42391). These two sub-industries are related to the distribution of sporting goods. We do not include the wholesale and retail sub-industries in the estimates of the size of the sports industry because these establishments also sell general recreation goods like camping, hunting and fishing supplies that are outside the scope of the sports industry as defined in this paper. Also, other wholesale and retail establishments handle sporting goods, so these sub-industries would not reflect all of the sporting goods equipment sales in the United States. We turn to other sources of data to portray the size of the sporting goods and supplies industry of the sports market.

The primary source of economic data disaggregated to the four-digit to six-digit NAICS code level is the Economic Census. The Economic Census takes place every five years, most recently in 2002. The Economic Census is based on a complete census of firms in the US, and reports summary statistics like total revenues, total payroll, and total employment for all of the industry-groups in the NAICS. In addition, supplementary Economic Census publications

contain details on sources of revenues of firms in various industry-groups. Both these data sources contain a rich variety of data on the supply side of various markets in the United States economy.

**Table 6: Summary Statistics for Firms in the Sports Industry, 2002**

<b>Sub-Industry</b>	<b>NAICS Code</b>	<b># Estab.</b>	<b>Employees</b>	<b>Revenues (mil)</b>	<b>Payroll (mil)</b>
Spectator Sports Teams	711211	674	40,746	\$13,025	\$9,106
Racetracks	711212	646	47,121	\$6,702	\$995
Other Spectator Sports	711219	2,752	19,860	\$2,585	\$664
Golf Courses	71391	12,261	312,812	\$17,533	\$6,656
Skiing Facilities	71392	387	70,083	\$1,801	\$631
Fitness/Rec. Centers	71394	25,290	445,508	\$14,987	\$4,953
Bowling Centers	71399	4,924	82,010	\$3,074	\$904
Sporting/ Athl. Gds. Mfg.	33992	2,235	62,166	\$11,855	\$2,075

Table 6 shows some summary statistics for the NAICS sub-industries identified above that are part of the sport market. In terms of number of establishments and employees, the Fitness and Recreation Center sub-industry is the largest of these, with over 25,000 firms employing over 445,000 people. In terms of total payroll, the Spectator Sports Team sub-industry is the largest, with \$9.1 billion in total payroll in 2002. Despite the small number of employees in this sub-industry, the total payroll is so large because of the high salaries received by professional athletes in the top leagues. In terms of revenues, the Golf sub-industry is largest, generating about \$17.5 billion dollars in revenues in 2002. In total, these sub-industries included 49,159 establishments employing 1,080,306 people in 2002. The total payroll for these establishments was just under \$26 billion and the total revenues earned by establishments were about \$71.5 billion. In terms of revenues, the Computer and Peripheral Equipment manufacturing (NAICS 33411) sub-industry is of similar size; in terms of employment, the Machinery manufacturing industry (NAICS 333) employs about the same number of people.

**Table 7: Sources of Revenue for Firms in the Sports Industry, 2002 (\$000,000s)**

<b>Sub-Industry</b>	<b>NAICS</b>	<b>Admissions</b>	<b>Dues</b>	<b>Food/Beverage</b>	<b>Radio/ TV</b>
Spectator Sports Teams	711211	4,623	n/a	171	4,852
Racetracks	711212	1,169	n/a	260	306
Other Spectator Sports	711219	31	n/a	8	21
Golf Courses	71391	n/a	5,904	3,931	n/a
Skiing Facilities	71392	13	138	213	n/a
Fitness/Rec. Centers	71394	636	8,620	641	n/a
Bowling Centers	71395	12	.38	847	n/a

Table 7 shows some summary statistics on sources of revenue for the same NAICS sub-industries in Table 6 (excluding Sporting and Athletic Goods Manufacturing). The primary sources of revenue differ slightly depending on the nature of the sub-industry but the main categories are admissions, revenue from radio and television, membership dues and sale of food and beverages. In the Spectator Sports Team sub-industry, 35.5% of the revenues of establishments come from admissions (about \$4.6 billion in 2002) and 37% come from radio and television broadcast fees (about \$4.8 billion in 2002). In the Golf sub-industry 57% of revenues come from membership dues or admissions, and 24% from the sale of food and beverages. In the Fitness and Recreation Center sub-industry, 57% of the revenues came from membership dues (\$8.6 billion in 2002). No other single category of revenues contributed more than 10% to total revenues in this sub-industry. The operation of establishments in these sub-industries differs considerably in terms of how they generate revenues. Also, note that total revenues earned by spectator sports teams and racetracks in 2002 were about \$5.2 billion dollars. This is the only estimate of the value of following sports through some media that we were able to find. It understates the total value of following sports through media because it ignores internet based sports content.

Several alternative sources of data about sporting goods equipment manufacturing firms exist. The NSGA publishes estimates of the revenues for sports equipment manufacturers. The



NSGA revenue estimates are for equipment manufacturers like Nautilus and Callaway (\$7.5 billion in revenues in 2005), footwear manufacturers like Nike (\$31.4 billion in 2005), and apparel manufacturers like Russell Athletic and Under Armour (\$5.5 billion in 2005). The NSGA estimate of total revenues for all sports equipment, footwear, and apparel manufacturers was \$44.4 billion in 2005.

#### *Demand Side Estimates*

The other side of the sports market is composed of purchases of tickets to spectator sporting events, sports equipment, fees paid for admission to participatory sport, and subscriptions and equipment used to watch and listen to sporting events on some sort of media. In general, these purchases can be made by households, other forms, and even the government at various levels. For example, households and businesses can buy tickets to spectator sporting events. Individuals, professional sports teams, and high school and college sports teams, and amateur sports teams all buy jerseys and other equipment for athletes. So spending on sports participation and spectator sports can come from all parts of the economy. However, we only have access to data on sport related spending by households. We do not know of a source of data on aggregate spending by other businesses and the government on spectator sporting events or sports equipment.

There are a number of sources of data on household spending on sports. Each has its strengths and weaknesses, and none are comprehensive because of the lack of a standard definition of the sports industry. The National Sporting Goods Association (NSGA) conducts an annual survey of consumer purchases of sporting goods. This survey was sent to 80,000 households across the US and was returned by 77% of the households contacted. The NASG survey asks questions about annual spending on many types of sporting goods, including

footwear, apparel and equipment. The US Bureau of Economic Analysis publishes estimates of annual consumer spending on admissions to spectator sporting events. This estimate includes spending on admissions to amateur and professional sporting events, including horse and dog race tracks and auto racing.

**Table 8: Consumer Spending on Selected Sports Items, 2005**

<u>Item</u>	<u>Total Spending</u>
Sports Equipment (NSGA survey)	13,474,300,000
Sports Apparel (NSGA survey)	10,898,000,000
Sports Footwear (NSGA survey)	15,719,000,000
<u>Admission to Spectator Sporting Events (BEA)</u>	<u>15,900,000,000</u>

Table 8 shows the estimated consumer spending for several sectors of demand side of the sports market in 2005 from the NSGA survey and the US Bureau of Economic Analysis.

According to the NSGA survey, spending on equipment, footwear and apparel by participants in sport was \$50.3 billion dollars in 2005. However, this total includes equipment purchases for a number of activities like hunting, fishing and camping that we exclude from the sports industry.

The estimated spending on equipment for activities that fall within our definition of the sports industry is about \$13.5 billion. The NSGA survey estimates for sports apparel and footwear were \$10.9 billion and \$15.7 billion, respectively, in 2005. These estimates overstate the spending on apparel and footwear in our definition of the sports market, but the NSGA data does not contain enough detail to adjust the estimate. The US Bureau of Economic Analysis (2006), in the August 2006 *Survey of Current Business*, reported spending on admissions to spectator sports to be \$15.9 billion dollars in 2005. Admissions to spectator sports consist of admissions to professional and amateur athletic events and to racetracks. Note that this definition of spectator sports varies in an important way from the definition employed by the U.S. Census

Bureau's NAICS codes. Recall the NAICS definition for the spectator sports teams and clubs comprises professional or semiprofessional sports teams such as baseball, football and basketball but does not comprise amateur athletics like high school and college sports.

**Table 9: Consumer Equipment Purchases by Sport, 2005**  
(millions of dollars)

<b>Sport</b>	<b>Spending</b>
Baseball and Softball	372.4
Basketball	309.3
Bowling	183.5
Exercise	5176.6
Football	95.2
Golf	3465.5
Skating (Hockey & Ice Skates)	138.5
Racquetball	45.4
Snow Skiing	642.7
Soccer	66.5
Tennis	379.1
Volleyball & Badminton Sets	32.1
Athletic Goods Team Sales	2567.5
<b>Total</b>	<b>13,474.3</b>

Together, this spending on sport accounted for less than 1% (0.76%) of the 8.7 trillion dollars of personal consumption expenditures in the United States in 2005. In comparison, this spending is roughly equal to the amount that consumers spent on gas in 2005, and about one ninth the size of annual consumer spending on health care.

Table 9 presents more detailed data from the NGSA survey of consumer spending on sporting equipment in 2005 reported on Table 8. The sports represented in Table 9 roughly correspond to some of the sports that respondents indicated they participated in the BRFS survey that are listed in Table 2. The largest expenditures are for exercise equipment (\$5.2 billion) and golf equipment (\$3.5 billion). These two expenditure categories comprise 36.48% of total

spending on equipment which was \$23.7 billion in 2005. The consumer expenditure data presented in Table 9 does not add up to \$23.7 billion because not all sports for which the NSGA collected data are represented in this table. For example, we do not show spending on camping equipment or fishing tackle because these activities do not fit the definition of sport used in this paper. Spending on camping equipment was \$1.4 billion in 2005 and spending on fishing tackle was \$2.1 billion so spending on equipment for these activities is substantial. After exercise and golf equipment, consumer spending on athletic goods for teams was the next largest category of expenditure at \$2.6 billion in 2005.

#### *Alternative Estimates of Consumer Spending on Sport*

The NSGA survey and the US Bureau of Economic Analysis (BEA) are not the only sources of data about consumer spending on sport. While these data sources provide important information about consumer spending, they also have limitations. The NSGA survey doesn't require the respondents to consult financial records when reporting their spending, so estimates based on this survey may have recall bias. The BEA estimates are based on National Income and Product Account estimates and must conform to North American Industrial Classification System (NAICS) industries that do not capture all of the sport industry as defined above.

An alternative source of data on consumer spending on sport is the Consumer Expenditure Survey (CEX). The Consumer Expenditure Survey is a nationally representative quarterly survey of household spending. Approximately 7,500 households take part in the interview survey each quarter, and the respondents are asked to consult bills and other financial records when responding to hundreds of detailed questions about their household spending and other characteristics. Since the CEX is conducted quarterly, and each household appears in the

survey for five consecutive quarters before being replaced, the survey is a rich source of data about consumer spending. Dardis et al. (1994) used CEX data to estimate expenditure on several forms of leisure, a broader category of consumer spending than we consider here.

The CEX asks a number of detailed questions about consumer spending on sports. Table 10 shows the CEX section and spending item description for all of the sport-related spending variables in the CEX. These spending variables include spending on consumer durables like exercise equipment, nondurables like clothing and shoes, tickets to spectator sporting events, memberships to fitness clubs and country clubs, and fees for sport participation. We group these different sport spending variables into three categories: spending on sports equipment, spending on spectator sport, and spending on sport participation. The category that each variable belongs to is shown in column three of Table 10.

**Table 10: Sport Related Expenditure Items in the Consumer Expenditure Survey, 2005**

<b>CEX Section</b>	<b>Item Description</b>	<b>Category</b>	<b>Spending</b>
Appliances and Equipment	General Sports Equipment	Sports Equip.	
Appliances and Equipment	Health and exercise equipment	Sports Equip.	
Appliances and Equipment	Winter sports equipment	Sports Equip.	
Appliances and Equipment	Water sports equipment	Sports Equip.	
Appliances and Equipment	Bicycles	Sports Equip.	
Appliances and Equipment	Other sports and recreation equip.	Sports Equip.	
Equipment Repair & Service	Sport and recreational equip.	Sports Equip.	
Clothing	Active sportswear	Sports Equip.	
<i>Estimated Total Spending on Sports Equipment, billions of dollars</i>			\$9.177
Subscriptions/Memberships	Season tickets to sporting events	Spectator Sport	
Entertainment expenses	Single admissions to spectator sports	Spectator Sport	
<i>Estimated Total Spending on Spectator Sports, billions of dollars</i>			\$4.902
Subscriptions/Memberships	Country clubs, health clubs, etc.	Sport Particip.	
Entertainment expenses	Fees for participating in sports	Sport Particip.	
<i>Estimated Total Spending on Sports participation, billions of dollars</i>			\$12.980

These spending variables, along with the sampling weights in the CEX, can be used to generate national estimates of total annual spending on each of the types of consumer sport spending shown on Table 10. If  $s_j$  is the spending on CEX item  $s$  by household  $j$  and  $w_j$  is the

sampling weight for household  $j$ , an estimate of total annual consumer spending on item  $j$  can be generated by

$$S = \sum w_j s_j$$

where  $S$  is the estimated total annual spending on CEX item  $s$ .

As part of the sampling methodology, the BEA publishes sampling weights for each household in the CEX. These sampling weights link the sampled household with the total number of households in the United States with these characteristics. In other words, each household sampled in the CEX represents a certain number of households in the United States, and the sampling weight reflects this number. If a sampled CEX household spends \$100 in a year on tickets to sporting goods, and that household represents 50 households in the US population, then  $s_j$  equals \$100,  $w_j$  equals 50, and their product equals \$5,000 in total annual spending. Adding this up for the entire CEX sample produces an estimate of total spending for the entire country.

The fourth column on Table 10 shows the annual estimated spending on each of these categories of consumer spending in 2005, the most recent data available in the CEX. Consumer spending on sports equipment was \$9.177 billion in 2005, consumer spending on single game and season tickets to spectator sporting events was \$4.902 billion, and consumer spending on memberships to health clubs and fees for sport participation like ski lift tickets was \$12.980 billion. The total estimated consumer spending for all these categories in 2005 was \$30.4 billion.

### **An Overall Assessment**

What is the bottom line regarding the size of the sports industry in the United States? We identified three main components of the sports industry: participation in sport, attending sporting

events, and following sporting events through some media. Total estimates of the economic value of these three components can be derived by adding up total revenues earned by businesses operating in the sports market, a supply side approach, or by adding up total expenditures by purchasers in the sports market, a demand side approach. Table 11 summarizes the various estimates developed above and shows three alternative estimates of the economic value of the sports industry in 2005. Table 11 disaggregates sport participation into four categories: equipment, apparel, footwear and fees.

First, consider our supply side estimate of the size of the sports industry. This estimate is based on sales and revenues earned by firms participating in the sports market. We developed several estimates of revenues earned by firms in the sports industry in the preceding sections. Based on data collected by the NSGA, revenues earned by vendors of sporting goods and equipment, footwear and apparel totaled \$44.42 billion in 2005. The largest component of the \$44.42 billion was for footwear (\$31.4 billion) followed by equipment (\$7.5 billion) and apparel (\$5.5 billion). These three values appear in the first three rows in the *Supply Side* column on Table 11.

In addition, participation in certain sports, like playing golf and skiing also require consumer outlays for admission to the venues. The US Census Bureau collects data on sources of revenues earned by firms based on product lines. One product line captured in these data is admissions, shown on Table 7. In 2002, revenues from admissions and membership dues to skiing facilities, golf courses and country clubs, fitness and recreation centers and bowling centers was \$15.3 billion, as shown on Table 7; this is equivalent to \$16.6 billion in 2005 dollars after adjusting for inflation using the Consumer Price Index. These revenues are shown on the

fourth row of the *Supply Side* column of Table 11. The subtotal for participation in the supply side estimate of the size of the sports market is \$61 billion.

Turning next to attendance at sporting events, recall that total attendance at professional and amateur sporting events such as Major League Baseball and NCAA football was just over 277 million in 2005. From table 7, the US Census Bureau reported 2002 revenues from admissions to spectator sports and race tracks to be \$5.8 billion, or \$6.3 billion in 2005 dollars. Finally, from Table 7, spectator sports teams and racetracks earned \$5.2 billion in revenues from radio and TV rights in 2002, or \$5.6 billion in 2005 dollars. These estimates understate the actual size of the sports industry because they do not count admission revenues for intercollegiate spectator sports. From Table 3, attendance at NCAA football and men's basketball alone was nearly equal to attendance at Major League Baseball games, and represents over 25% of the total 2005 spectator sporting event attendance on Table 3. This suggests that the spectating and mediated categories under estimate the actual revenues in these categories by over one third.

Adding each of these categories of revenues up produces a supply side estimate of the economic value of the sports industry of just under \$73 billion. This total is not that different from the total NAICS-based revenue estimate shown on Table 6 of \$71 billion, which is \$77 billion when expressed in 2005 dollars.

An alternative estimate of the economic value of the sports market can be arrived at by adding up total spending by consumers on each of the categories on Table 11, a demand side approach. Using the demand side approach, we have two estimates because of conflicting estimates of consumer spending. From Table 9, the NSGA estimated total consumer spending on sports equipment at \$13.47 billion in 2005. From Table 10, the estimate of consumer



spending on sports equipment from the CEX was \$9.18 billion. However, from Table 9, the NSGA estimates contain \$2.5 billion in athletic equipment sales to teams which would not be captured by the household based CEX. Removing this \$2.5 billion from the NSGA estimate makes the demand side estimate of consumer equipment expenditure that makes up Estimate 1 on Table 11 less than a billion dollars more than the upper 95% confidence interval value, \$9.8 billion dollars, on the CEX-based consumer equipment expenditure estimate that makes up Estimate 2.

The consumer footwear and apparel estimates for both demand side estimates come from NSGA data reported on Table 8. These two estimates clearly overstate the size of the sports market in these categories, since not all athletic apparel and footwear is used by participants in the sports market.

The second discrepancy in the demand side estimates of the size of the sports industry comes from estimates of consumer spending on spectator sporting events. The Bureau of Economic Analysis, in the August 2006 *Survey of Current Business*, estimated consumer spending on admission to spectator sporting events in 2005 at \$15.9 billion. The Consumer Expenditure Survey estimate of spending on season tickets and single admission tickets to spectator sports in 2005 was \$4.9 billion. The Consumer Expenditure Survey estimates are considerably less than the other sources of data. One possible explanation for this difference is that the Consumer Expenditure Survey is not capturing corporate spending on admissions to sporting events. Corporate spending is likely a large component of the US Census Bureau data due to corporate spending on premium seating locations and luxury boxes. The difference between the BEA and CEX estimates of personal spending on attendance at spectator sporting events is difficult to explain. Future research should explore the source of this discrepancy.

These two alternative demand side estimates of the size of the sports industry produce an estimate of between \$44 billion and \$60 billion of total consumer spending from the demand side of the sports market. Both estimates understate the actual size of the sports market because we do not have an estimate of consumer spending on following sports through media like TV, radio, and the WWW.

**Table 11: Estimated Total Economic Value of Sports Industry, 2005  
(Billions of Dollars)**

Component		<i>Supply</i>	<i>Demand Side</i>	
		<i>Side</i>	Estimate 1	Estimate 2
Participation	Equipment <sup>a</sup>	\$7.50	\$13.47	\$9.18
	Footwear <sup>b</sup>	\$31.40	\$10.90	\$10.90
	Apparel <sup>c</sup>	\$5.50	\$15.70	\$15.70
	Fees <sup>d</sup>	\$16.60	\$3.25	\$3.25
	Subtotal, Participation	\$61.00	\$46.39	\$39.03
Spectating <sup>e</sup>	\$6.30	\$15.90	\$4.91	
Mediated <sup>f</sup>	\$5.65			
<b>Total</b>		<b>\$72.95</b>	<b>\$59.22</b>	<b>\$43.94</b>

a: Supply side estimate from NSGA; estimate 1 from NSGA, Estimate 2 from Consumer Expenditure Survey

b: Estimates from NSGA

c: Estimates from NSGA

d: Supply side estimate 1 from U.S. Census Bureau, demand side estimate from Consumer Expenditure Survey

e: Supply side estimate from U.S. Census Bureau; estimate 1 from BEA Survey of Current Business, estimate 2 from Consumer Expenditure Survey

f: Estimate from U.S. Census Bureau (see Table 7)

Our supply side estimate exceeds the two demand side estimates by a wide margin, primarily because of the \$21 billion difference between revenues earned by footwear manufacturers and consumer spending on athletic footwear and our lack of an estimate of consumer spending on mediated sport spectating. One reason for this difference could be exports of athletic footwear.

All three estimates are much lower than the \$152 billion estimate of the size of the sports industry reported by Meek (1997), which would be \$195 billion in 2005 dollars. However, this

is a national income and product accounts based estimate that, for reasons discussed above, probably overstates the size of the sports industry by a wide margin.

## **Conclusions**

We set out to document the scope of the sports industry in the United States by estimating individual active and inactive participation in sport and the value of economic activity in the sports market from both a supply and demand perspective. While conceptually simple, both aspects of determining the size and scope of the sports market proved to be challenging because of the lack of a commonly accepted definition of the sports industry. The sports industry is somewhat unique in this regard since many industries are clearly defined by the United States Census Bureau or other government agency that collects statistical data on economic activity. In addition, determining the amount of inactive participation in sport through attendance at sporting events and viewing and listening to sports on television, radio and internet is difficult given the existing data. Despite the challenges, we developed a working definition of the sports industry for purposes of the paper and used a variety of publicly available data sources to develop estimates of the scope of the sports industry.

We define the sports industry as having three principal components: 1) activities involving individual participation in sport; 2) activities involving attendance at spectator sporting events; and 3) activities involving following spectator sporting events on some media. We then examined participation and developed estimates of industry revenues and expenses and consumer expenditures related to these three components.

Our analysis of the NSGA and BRFSS surveys indicates that individual participation in sport in the United States is significant. In any year, over 50% of the US population reported

participating regularly in sports, and a much larger fraction of the population participate either regularly or occasionally. Walking is by far the commonly reported for of sport participation. The economic activity associated with participation in sport includes the monetary and time costs incurred to participate in sport. Both of these costs vary considerably depending on the sport. For example, snow skiing and playing a round of golf are more costly in terms of time, equipment costs and admission fees than taking a walk or going for a swim.

Americans also spend a great deal of time attending spectator sporting events. Estimates from the American Time Use Survey indicate that, in aggregate, Americans spent a total of 797.2 billion hours attending sporting events in 2005, or nearly 9.5 hours per person per year. In addition, a considerable amount of time is spent following sports through media like newspapers, television, radio and the WWW.

While we believe that this exercise has been worthwhile, because no recent research has addressed the topic, we also hope that this paper will spur additional research. A number of important questions are raised by these results. First, and foremost, is the question of how to best define the sports industry in economic terms. This is important because it also helps to define spore economics. Although we develop a working definition of the sports industry that allows us to generate estimates of the economic size of the industry, our definition has a number of important limitations that can only be overcome by additional research. Second, our estimates have uncovered several interesting and potentially important discrepancies between estimates of specific types of consumer spending in the sports market generated from the Consumer Expenditure survey and other alternative sources. Further research should examine the source of this discrepancy. Third, despite a thorough search, we found no comprehensive estimates of the amount of spending by consumers who follow sports through media like television, radio, and,

increasingly, the WWW. Given the obvious importance of this facet of consumer behavior, and the increasing use of the WWW, this gap in the literature clearly needs to be filled.

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