

## MAJOR CONTEMPORARY ISSUES IN SPORTS ECONOMICS

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### Summary

Covering the major issues regarding the interaction of sports with the economy first implies to make a clear distinction between the sports economy and sports economics. The sports economy refers to issues such as measuring the economic significance of sports, delineating the economic dimension of sport participation and sport events which derive into a number of growing and even globalizing markets, and empirically studying the relationship between sports and economic (under-) development. On the other hand, sport is an area in which the tools of economists are increasingly spreading. Those issues tackled by economists have become so numerous that a whole handbook (Andreff & Szymanski, 2006) covering only the major economic analyses of sport encompasses 86 chapters and over 800 pages.

A collection of the best articles in sports economics published until 2000 is twice that thick (Zimbalist, 2001) while its update since 2001 – *i.e.* only with the best articles published in the past ten years – is of about the same size (Andreff, 2011a). We have selected here the most crucial topics among the major issues in sports economics: the economic determinants of sport performance; the economic impact of sport mega-events; the economics of professional team sports; globalization of the labor market for sport talents; and some dysfunctions in sport related to big money inflows in the sports industry.

### 1. A Globalizing Sports Economy

#### 1.1. The Economic Significance of Sport

There are three methodological tools of national economic accounting that have been used to measure the economic significance of sport: national income and expenditure accounts, input-output table, and the satellite account technique.

National income accounts are based on *ex post* macroeconomic equilibrium (Andreff, 2006a), such as:

$$Y = C + G + I + \Delta S + X - M \quad (1)$$

where  $Y$  stands for gross domestic product (GDP),  $C$  for private consumption,  $G$  for public consumption,  $I$  for gross fixed capital formation,  $\Delta S$  for stock variation,  $X$  for exports and  $M$  for imports.  $Y - (X - M) = TDE$ , (total domestic final expenditure), is also an often calculated aggregate in economic accounts of sports in view of looking at how sport expenditures are financed – and by whom – in a nation. The overall finance of sport is equal to the sum of sport expenditures financed by Government  $G$ , Local Authorities  $LA$  ( $G + LA$ : public finance of sport), Households  $H$  and Enterprises (sponsors and media)  $E$  ( $H + E$ : private finance of sport), so that:

$$TDE = G + LA + H + E \quad (2)$$

<b>England's sports economy (£ million)</b>	1985	2000	2005	2008	% in 2008
Gross Value Added in the sports economy	3358	10373	15471	16668	100
Commercial sport	1027	3276	3924	4327	26.0
Non commercial sport	1776	4945	7887	8636	51.8
Voluntary sector	93	1256	2312	2110	12.6
Public sector	462	896	1341	1596	9.6
Sport gross value added / GDP (in %)	1.2	1.5	1.7	1.5	
<b>France's sports economy (€ billion)</b>	1990	2000	2005	2007	% in 2007
Households sport expenditures	7.6	12.3	15.2	16.4	49.7
Enterprises sport expenditures	0.6	1.7	3.1	3.2	9.7
Government sport expenditures	1.2	2.8	3.0	3.2	9.7
Local authorities sport expenditures	3.8	7.6	9.1	10.2	30.9
Total	13.2	24.4	30.4	33.0	100
National sport expenditure / GDP (in %)	1.2	1.7	1.76	1.75	
Sources: SIRC (2010) and StatInfo. French State Secretary for Sports.					

Table 1. The sports economy in national income (England) and national expenditure (France)

For instance, England publishes accounts of the sports economy according to a supply side view adopted in (1) since 1985 while France uses the demand side approach in (2) in its regular publication of statistics since 1990 (Table 1).

The input–output matrix (IOM) gives a picture of the domestic economy as linking different industries into an overall interdependent system. A vertical row of the IOM, say for industry  $j$ , describes:

$$X_j = \sum_i X_{ij} + A_j + W_j + T_j + P_j \quad (3)$$

where  $X_j$  is the output of industry  $j$ ,  $\sum_i X_{ij}$  is the total intermediary consumption of products  $i$  by industry  $j$ ,  $A_j$  is the consumption of fixed capital (depreciation) in industry  $j$ ,  $W_j$  the total wage paid in industry  $j$ ,  $T_j$  taxes paid by industry  $j$ , and  $P_j$  the producers' profit in industry  $j$ , while the value added of industry  $j$  is  $V_j = W_j + T_j + P_j$ .

A column of the IOM describes how the value of an industry  $i$  is distributed across the intermediary consumption  $X_{ji}$  of all the industries in the economy and the final demand:

$$X_i = \sum_j X_{ji} + C_i + G_i + GCFC_i + \Delta S_i + X_i \quad (4)$$

where  $C_i$  stands for the private final consumption of the product  $i$ ,  $G_i$  for its public consumption,  $GCFC_i$  for gross fixed capital formation in product  $i$ ,  $\Delta S_i$  its stock variation, and  $X_i$  exports of  $i$ , while the final demand of the product  $i$  is  $Y_i = C_i + G_i + GCFC_i + \Delta S_i + X_i$ . The IOM not only builds up the overall *ex post* macroeconomic equilibrium – including the equality between the total value added and the total final demand for all industries – but also a consistent interdependence across all industries.

A simulation based on the Canadian IOM (Saint-Germain & Harvey, 1998) was used to depict the 'industrial cluster' of sports (that is, the subset of all industries having some significant relationship with sporting activities and their inter-relationships). Two core industries in this cluster are the sports goods industry (industry 147 in the IOM classification adopted by *Statistique Canada*) and the sports services industry. The latter is identified with industry 203: 'Theatres, sports and other leisure services', whose production comprises two-thirds of sports services. An exogenous increase in the final demand addressed to these industries was simulated with a computer to see which industries were the most interlinked. Calculations were done for the year 1990.

In Germany, a simulation model, coined SPORT, integrates the sports economy into the IOM of Germany, starting from the 1993 IOM (Meyer *et al.*, 2000). A sub-IOM, specific to the sports economy, is integrated into the overall IOM set up by the *Statistisches Bundesamt* for the whole German economy. This specific sub-matrix encompasses seven rows, in addition to the 58 rows of the overall German IOM: (i) bicycles; (ii) sports equipment, (iii) sports footwear; (iv) sportswear; (v) commercial sports services; (vi) sports services supplied by clubs and associations; and (vii) sports services supplied by public and local authorities (the federal government, *Länder*, municipalities). The aggregated value added of these seven specific sports industries was calculated for 1998 at about 1.4 per cent of GDP (a higher economic importance than the German textile industry). The SPORT econometric simulation model relies on the relationships between the seven specific sports industries and the 58 other industries

in the overall IOM (in its most detailed version the model contains 150 variables and 36,000 equations, covering the 65 industries). It was used to calculate that in 1998, 2.4 per cent of all those employed in Germany worked in the seven sports industries. Another simulation (Ahlert, 2000) showed that a reorientation of the total household demand for sporting activities from the clubs to commercial sport would trigger, as of 2010, a slight increase in GDP due to the substitution of high value added and profitable commercial organizations to lower value added and less efficient clubs relying on voluntary work. On the other hand, efficient commercial organizations would reduce intermediary consumption, compared to the clubs, thus the demand for inputs would fall and 15,600 jobs would be lost between 2000 and 2010 in the German economy.

The purpose of a satellite account is to apply the methodology of national accounting to a specific area (sports) with adapting some concepts and classifications of national economic accounting in view of depicting the production and its finance, and the expenditures in this area. It collects information about costs, finance, factors of production and users (consumers) involved. An area's national expenditure is the sum of all finance of the area's specific activities and uses of goods and services, including non monetary non market services (like voluntary work in sport). The first satellite account for the sports economy ever built was set up in France for the year 1971 (Malenfant-Dauriac, 1977). The sports economy was divided into six sectors: (i) the commercial sector; (ii) households; (iii) public administrations (central and local); (iv) sports associations; (v) financial institutions; and (vi) the overseas sector. In 1971, the economic importance of sports in France was found to be 0.5% of GDP, the consumption of goods and services was about 0.8% of overall household consumption, and investment in sporting activities reached 0.9% of gross fixed capital formation. The non-monetary section of the satellite account was rather simplified. However, it estimated that the number of voluntary workers involved in sports was nearly 600 000 people.

Paradoxically, the U.S. are lagging behind with regards to accounting of the sports economy. Only a recent work (Humphreys & Ruseski, 2009) has attempted to assess the significance of the US sports markets, though without using a standard national accounting methodology. An account is built up basically relying, on the supply side, on the North American Industrial Classification System for the year 2005, then using some additional data from the National Sporting Goods Association (NSGA) and the Behavioral Risk Factor Surveillance System and, on the demand side, on NSGA data about households sport expenditures and Bureau of Economic Analysis data (Table 2).

Since the sports economy is globalizing (Andreff, 2008) what is required now is an international (global) sport accounting. It does not exist so far, but a few steps forward toward such an objective have been reached in Europe. Following the initiative of the Committee for the Development of Sport (CDS) of the Council of Europe launched in 1984, a first report has collected available – but non-comparable – data about the sports economy in some European countries (Jones, 1989). A second more extensive report was based on homogenous and comparable data systematically gathered from 12 European countries, including one post-communist economy, Hungary (Andreff et al., 1994). The focus was on national sport expenditure and how it was financed in the base year 1990 by public and private sources. An update of this data collection has been

achieved for the year 2005, in all the EU 27 countries, on the initiative of the French State Secretary for Sports (Table 3 exhibits a data summary for those countries which have provided complete responses). The same European model of financing sport expenditures emerges in 2005 as in 1990 with households as its major pillar then, according to their significance, local authorities, enterprises and the government.

	Supply side	Demand side
Sport participation	61.00	46,39
of which: Equipment	7.50	13,47
Footwear	31.40	10.90
Apparel	5.50	15.70
Fees	16.60	3,25
Spectating sport	6.30	15.90
Mediated sport	5,65	
Total	72,95	59,22

Table 2. Estimated total economic value of sports industry United States 2005 (billion \$) Source: Humphreys & Ruseski (2009).

Country	Overall sport finance		Government	Local authorities	Public finance	Household expenditures	Enterprise expenditures	Private finance
	€ million	% of GDP						
Bulgaria	59.7	0.21	34.8	42.7	77.5	19.4	3.1	22.5
Cyprus	212.9	1.56	19.8	0.1	19.9	78.9	1.2	80.1
Estonia	127.1	1.13	13.3	36.4	49.7	12.6	37.7	50.3
Finland	2450.0	1.56	8.7	15.0	23.7	73.4	2.9	76.3
France	30330.0	1.76	9.7	30.0	39.7	50.0	10.3	60.3
Germany	31932.6	1.42	0.7	15.3	16.0	76.5	7.5	84.0
Lithuania	79.3	0.38	17.5	35.1	52.6	20.3	27.1	47.4
Netherlands	8359.0	1.64	11.5	10.0	21.5	70.8	7.7	78.5
Portugal	1432.5	0.96	6.5	27.0	33.5	63.2	3.3	66.5
Slovakia	240.8	0.63	16.8	55.6	72.4	13.8	13.8	27.6
Slovenia	195.0	0.69	10.4	25.1	35.5	17.9	46.6	64.5
Sweden	3817.1	0.52	4.3	13.0	17.3	70.6	12.1	82.7
United Kingdom	30175.6	1.67	1.3	7.3	8.6	80.9	10.5	91.4
Average			<b>11.9</b>	<b>24.3</b>	<b>36.2</b>	<b>49.7</b>	<b>14.1</b>	<b>63.8</b>

Source: Amnyos (2008).

Table 3. National sport expenditure and its finance in the EU 27 countries, 2005

In 2006, following an Austrian initiative, the Sports Directors of EU 27 countries have started up a process of elaborating on a European sport satellite account in view of

measuring the exact weight of the sports economy in GDP, and its impact on employment, and value added. A triple definition of sport has been adopted in 2007 (the so-called Vilnius definition) in order to precisely delineate the sports economy to be accounted for. A statistical definition of sport encompasses just only one NACE category, 92.6 “Sporting Activities”, which does not reflect the economic importance of sport. NACE category 92.6 refers only to a minor, though essential fraction of the overall sport sector. A more comprehensive definition of sport includes all items that are necessary to perform sports. This classification includes sporting goods such as sport shoes and tennis rackets and is referred to as the *narrow* definition of sport. In addition, a so-called *broad* definition of sport includes the statistical definition and the narrow definition but also comprises relevant parts of industries that use sport as an important input for their production, e.g. television broadcasting. In 2010, 8 EU countries were engaged in providing a European satellite account regarding their own national sports economy. Only three of them succeeded so far (Table 4) due to a heavy statistical methodology embedded in the Vilnius definition.

	<b>(billion €)</b>		
Sport-linked activities	<b>Austria</b>	<b>Cyprus</b>	<b>England</b>
Gross value added	8.4	0.31	33.7
Gross value added / GDP (%)	4.0	2.4	2.2
Sport consumption expenditures	4.7	0.30	34.7
in % of overall consumption	3.6	3.7	3.0
Employment (thousand employees)	219	7,6	569
in % of overall employment	5.8	2.2	2.0
Source: Sport Unit, European Commission			

Table 4. European sport satellite accounts: summarized results, 2004

## 1.2. From Sport Participation to Global Sport Markets

Sport participation has started globalizing long ago when so-called modern sports have spread across the borders, throughout an increasing number of countries, since the second half of the 19<sup>th</sup> century. Think of football, rugby, track and fields, basketball and so on. Football (soccer), the global sport *par excellence*, accounts for 265 million registered participants affiliated to 207 national associations (federations) in the world, in 2006, according to FIFA Big Count. Maybe twice more once non registered participants are taken on board.

In the late 19<sup>th</sup> – early 20<sup>th</sup> century, some sports contests became international then global like the Olympics promoted by Coubertin and world championships and cups in different sport disciplines. The 20<sup>th</sup> century has witnessed a rapid growth in the number of global sport events per year: there were 20 such sports events in the year 1912, 315 events in 1977, 660 in 1987 and 1,000 in 2005. Almost an average of three mega-events per day! The audience of such events is increasing on a global scale thanks to TV broadcasting. Globalization of sport mega-events has been the next step. The Olympics and FIFA football (soccer) World Cup have got the status of a genuine world event every fourth year (Kurscheidt, 2006; Preuss, 2004). The economic spillovers of global

sporting events in host countries too often remains the fallacy of sensational and publicized over-estimation taking its roots in methodological tricks or even crude mistakes (see 2.2 below). It is common knowledge that, since London was awarded the rights to host the 2012 summer Olympics, its actual cost keeps on rising by the day and is currently greater than any expected benefits there from. Nevertheless, some economic impact – even sometimes negative – occurs with global sports events.

The market for TV broadcasting of sporting events is definitely global: big events are broadcast in 170 to 220 countries each. TV broadcasting (Table 5) generates or reinforces differentiation, or even discrimination, across the various sport disciplines: for instance, football always retains the largest coverage. By the same token, a number of less popular disciplines are simply out muscled from the TV screens. Do you remember the last polo or water polo match was aired live on TV? In fact, television exacerbates all other factors of uneven economic development across different sports due to its media and financial interests in a few privileged sports.

<b>Sports mega-events</b>	<b>TV rights</b>	<b>Time period</b>	<b>Amount</b>
FIFA soccer World Cup	World	2002 & 2006	1950
Summer & Winter Olympics	World	2010 & 2012	2700
UEFA soccer Champions League	France	2003/2006	179
English soccer Premier League	United kingdom	2007/2010	2500
French soccer Ligue 1	France	2008/2012	668
National Basketball Association	USA	2007/2008	660
National Football League	USA	2007/2008	2 850
National Hockey league	North America	2007/2008	66
Major League Baseball	USA	2006/2007	420

Source: Bourg & Gouguet (2010).

Table 5. TV broadcasting rights of 9 sports mega-events

The greater the audience of a sporting event, the higher is the price for an advertising spot to be broadcast immediately before or during the event or at halftime break. Another feature of the global market for sport broadcasting is that it operates under imperfect competition. All depends on whether the market is in excess demand or excess supply. The short side of the market usually imposes its transaction conditions to those competing together on the long side of the market. The different forms of the sport broadcasting market are (Bourg & Gouguet, 2010): (a) a monopoly when only one organizer supplies his/her exclusive sports event to competing TV channels (consider the IOC offering Olympic Games, FIFA with the football World Cup). In a monopoly market, price is relatively high, broadcasting rights are expensive and revenues accruing to the organizer are big; (b) an oligopsonistic monopoly when only one event organizer is facing very few potential buyers – TV channels (UEFA Champions League, European football championships). Broadcasting rights are still high though lower than in the monopoly case due to fewer competitors on the demand side; (c) a bilateral monopoly which was often the current situation when a single public TV channel

monopolized the demand side (a demand side monopoly is coined a monopsony) of a domestic market or when a European cartel of public channels (ERU) merged all demands for a sport event to be broadcast on a European scale. In the case of bilateral monopoly, economic theory teaches that the transaction price is determined by the relative bargaining power of the monopoly and the monopsony. Usually the price is lower than the price emerging in the presence of a pure or oligopsonistic monopoly; (d) a monopsony when professional clubs are competing for the sale of their individual broadcasting rights to a single TV channel (French football championship in the 1970s) instead of the league pooling the rights for all clubs. Then, in such a case, the lowest price is reached, as well as the lowest revenues for sport organizers, since they are competing on the long side of the market in the face of a single buyer.

Another outcome of globalization of sport shows and events through TV broadcasting is a globalization of sport sponsorship. Sponsors of global sport events are famous multinational companies (Coca Cola, McDonald's, etc.) and, of course, those involved in the sports goods industry such as Nike, Adidas, Puma, Asics, and so on. Economic analysis of sports sponsorship is now well established (Jeanrenaud, 2006). A new trend of 'naming' has emerged. In such a case the sponsor's name is associated with a stadium or a sport arena instead of being attached to an athlete, a team or a sports contest. A big issue with sports sponsorship emerged when it started to be linked to global TV broadcasting, which is ambush marketing. For example, when Linford Christie was interviewed by a number of TV channels before the 100 meters Olympic final in Atlanta 1996 he was wearing lenses with Puma label while the official sponsor of the Games was Reebok (for a \$ 30 billion entrance fee). The last trend in a globalizing sports economy, which has accelerated during the 2000's, consists in the 'revolution' in sport betting and gambling that has been made possible by the e.economy, namely betting on line and through Internet. Millions of people now can bet overnight on the outcome of the English football Premier League or any other attractive sport contest.

A last, not least consequence of a globalizing sports economy is the swift growth of the sporting goods industry in the past three decades (Andreff, 2006b). Its most spectacular aspects are an important international trade in sports goods and equipment in part triggered by foreign direct investment geared towards relocating production in low unit labor cost countries by multinational companies like Nike and Adidas (which together take over two-thirds of the global sport footwear market), and others. As a result, the major net exporters of sporting goods are emerging (non Asian) and Asian countries, China ahead of all. NAFTA countries (Canada, Mexico, USA), the EU 15 and Switzerland are net importers (Figure 1). All major net importing developed countries show balance deficits in trite (not much specialized) sports goods such as sportswear, anoraks, rackets, and balls. Developed market economies (NAFTA and Europe) have few competitive sports goods with excess balance. The assumption that developed countries are specialized as net exporters only of high value added and high-tech equipment-intensive sports goods whereas they are specialized as net importers of trite sporting goods is empirically verified (M. & W. Andreff, 2009). In the representative sample of 41 countries studied, the overall value of global international trade in sports goods is \$ 30 billion in 2004 (\$ 32 billion in all countries of the UN Comtrade database).



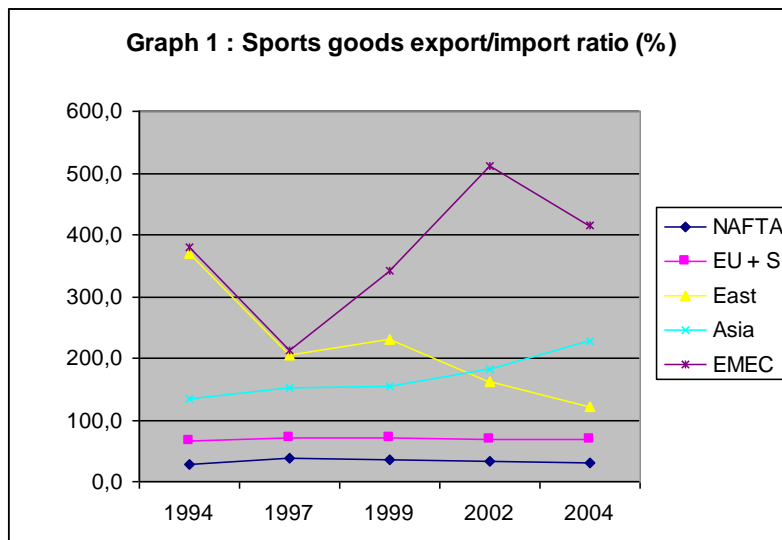


Figure 1. Sports goods export/import ratio (%)

EU+S: EU 15 as of 2003 and Switzerland; East: Central Eastern European and CIS countries; Asia: Asian countries; EMEC: other emerging countries (outside Asia).

Source: M. & W. Andreff (2009).

In absence of global accounting of the sports economy, we cannot avoid resorting to guesstimates usually published in the press when assessing the magnitude of global sport markets. In 2006, the global market for all sporting goods and services taken together was assessed in the range of € 550-600 billion. Global market for football was valued at € 250 billion. The market for all sporting goods was valued about € 150 billion. The value of broadcasting rights related to sport events was estimated at € 60 billion while the global market for sports sponsorship was nearly € 18 billion. The global market for doping was assessed at € 6 billion. These figures must however be taken with a pinch of salt. It derives one recommendation which could be that the UN-designed accounting system – implemented in all member countries – should be adapted and detailed enough to extensively cover the sports economy, given its increasing significance in the world economy.

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Andreff W. (2011a), *Recent Developments in Sports Economics*, Cheltenham: Edward Elgar, 2 volumes, 690 pages. [A collection of best 61 articles published in sports economics during the 2000s: the economic significance of sports markets; the economic impact of sports events and sport facilities; professional sports: economic design, finance, efficiency, economic equilibrium, competitive balance, attendance, labor market for talents, pay and performance; game theory applied to sports; international dimensions in sports economics; economic dysfunctions in sports].

Andreff W. (2011b), Some Comparative Economics of the Organization of Sports: Competition and Regulation in North American vs. European Professional Team Sports Leagues, *European Journal of Comparative Economic Studies*, 8 (1), 3-27. [Presentation of a new area for comparative economic studies: an economic analysis comparing the North American closed league system to the European open league system in professional team sports].

Andreff W., Bourg J.-F. (2006), Broadcasting Rights and Competition in European Football, in: C. Jeanrenaud, S. Kesenne, eds., *The Economics of Sport and the Media*, Cheltenham: Edward Elgar, 37-70. [Comparative economic analysis of the TV broadcasting rights pooling by the league and the individual club ownership of TV rights and their impact on economic competition and competitive balance in major European soccer leagues].

Andreff W., Bourg J.-F., Halba B. & Nys J.-F. (1994), *The Economic Importance of Sport in Europe: Financing and Economic Impact*, Background document to the 14th Informal Meeting of European Sports Ministers, Council of Europe, Strasbourg, 208 pages. [Official report after a one-year inquiry]

about sports financing and commercial impact of sport in Europe based on a sample of twelve European countries, including one Central Eastern European transition economy, that is, Hungary].

Andreff W., Raballand G. (2011), Is European Football Future to Become a Boring Game?, in W. Andreff, ed., *Contemporary Issues in Sports Economics: Participation and Professional Team Sports*, Cheltenham: Edward Elgar, 131-67. [Explaining why so many 0-0 and 1-0 scores are flourishing in European soccer by its relationship with competitive balance, attendance, rising defensive tactics on the pitch, and new FIFA rules; such trend may dampen European soccer attractiveness].

Andreff W., Staudohar P. (2000), The Evolving European Model of Professional Sports Finance, *Journal of Sports Economics*, 1 (3), 257-76. [Often-quoted paper describing the new contemporary model of sport finance relying on media, corporations, merchandising and markets at a global level as opposed to the former model based on spectators, subsidies and sponsors at a local level].

Andreff W., Szymanski S. (2006), eds., *Handbook on the Economics of Sport*, Cheltenham: Edward Elgar, 830 pages. [The most significant handbook in the area which deals with nearly all topics known in sports economics, thanks to the contribution of 65 authors from ten different countries to the 86 chapters].

Ascari G., Gagnepain P. (2006), Spanish Football, *Journal of Sports Economics*, 7 (1), 76-89. [Analysis of the financial crisis in the Spanish football industry stressing the important relationship of the industry with television and structural weaknesses in its financial accounts].

Baade R.A., Matheson V. A. (2000), An Assessment of the Economic Impact of the American Football Championship, the Super Bowl, on Host Communities, *Reflats et Perspectives de la Vie Economique*, XXXIX (2-3), 35-46. [Assessing the economic impact of the American football Super Bowls from 1973 through 1999, the evidence is that this impact is on average one-tenth or less the magnitude of the NFL estimate].

Baade R.A., Matheson V.A. (2001), Home Run or Wild Pitch? Assessing the Economic Impact of MLB' All Star Game, *Journal of Sports Economics*, 2 (4), 307-327. [Although the MLB asserts a significant boost to metropolitan economies due to the game, All-Star Games since 1973 are actually associated with worse than expected economic performance in host cities].

Ball D. (1972), Olympic Games Competition: Structural Correlates of National Success, *International Journal of Comparative Sociology*, 13, 186-200. [The first Western study resorting to political regime as a variable that explains Olympic medal wins].

Barget E., Gouguet J.-J. (2007), The Total Economic Value of Sporting Events: Theory and Practice, *Journal of Sports Economics*, 8 (2), 165-82. [Trying to internalize both positive and negative external effects and thus determine the total economic value of a sport event which would measure its real net social utility. Given the well-known shortcomings of a cost-benefit analysis, the authors resort to a deliberative approach in view of providing some decision making assistance which is exemplified with the Davis Cup quarter final between France and Germany in 1996].

Barget E., Gouguet J.-J. (2010), *Evènements sportifs: Impacts économique et social*, Bruxelles: De Boeck, 462 pages. [Recently published, the 'Bible' with regards to all methodologies of estimating the economic impact, costs and benefits and the net social utility and overall economic value of hosting a sports mega-event].

Barros C.P. (2006), Evaluating Sport Events at European Level: Euro 2004, *International Journal of Sport Management and Marketing*, 1 (4), 400-10. [In the case of hosting the Euro 2004 soccer championship, only a small proportion of the Portuguese population was willing to pay a declared small amount. The Euro 2004 was not Pareto-improving the public good since the aggregated willingness to pay was lower than the estimated total costs, at a nation level].

Barros C.P., Ibrahim M., Szymanski S. (2002), eds., *Transatlantic Sport. The Comparative Economics of North American and European Sports*, Cheltenham: Edward Elgar, 222 pages. [Proceedings of the 3<sup>rd</sup> conference of the International Association of Sport Economists in Lisbon, 2000 which was devoted to a transatlantic economic comparison of sports organization, financing, public policy, economic theory of team sports and cost-benefit analysis of sports events].

Berentsen A. (2002), The Economics of Doping, *European Journal of Political Economy*, 18, 109-27. [The most fundamental paper about the economics of doping uses the game theory. It is a strategic game with two players deciding simultaneously and secretly to use performance-enhancing drugs before they

compete. In a mixed-strategy equilibrium, the favorite player is more likely to take these drugs than is the underdog, yet, for some parameter values he is less likely to win the game with doping opportunities than without. Ranking-based punishment schemes are less costly to implement than are IOC regulations because fewer tests are needed to attain the no-doping equilibrium].

Bernard A.B., Busse M. R. (2004), Who Wins the Olympic Games: Economic Resources and Medal Totals, *Review of Economics and Statistics*, 86 (1), 413-17. [One of the most famous and most achieved econometric models for estimating and predicting Olympic medal wins].

Bourg J.-F., Gouguet J.-J. (2010), *The Political Economy of Professional Sport*, Cheltenham: Edward Elgar, 260 pages. [A radical political economy approach of various major issues in sports economics: economic history of professional sport, the economic impact of professional sport, economic development and sporting performance, the relationships between professional sport and television, the segmentation of the sports labor market, organization of professional sport and competitive balance, doping, sport as a global public good].

Clarke S.R. (2000), Home Advantage in the Olympic Games, in: G. Cohen, T. Langtry, eds., *Proceedings of the Fifth Australian Conference on Mathematics and Computers in Sport, Conference proceedings*, University of Technology, Sydney, 43-51. [The first study introducing home advantage, i.e. the fact of being the host country, in the economic modeling of medals won at the Olympics].

Coates D., Humphreys B. (2007), Ticket Prices, Concessions and Attendance at Professional Sporting Events, *International Journal of Sport Finance*, 2 (3), 161-70. [The analysis confirms that attendance demand is price inelastic and that ticket pricing in the inelastic portion of the demand curve is consistent with revenue maximization by monopoly teams that also set prices for related goods and services like concessions and parking closer to the elastic portion of the demand curve].

Duggan M., Levitt S.D. (2002), Winning Isn't Everything: Corruption in Sumo Wrestling, *American Economic Review*, 92 (5), 1594-605. [The authors show that wrestlers win a disproportionate share of the matches when they are on the margin. Increased effort cannot explain the findings. Match rigging disappears in times of increased media scrutiny. Wrestlers who are victorious when on the bubble lose more frequently than would be expected the next time they meet that opponent, suggesting that part of the payment for throwing a match is future payment in-kind. Reciprocity agreements between stables of wrestlers appear to exist, suggesting that collusive behavior is not carried out solely by individual actors].

Eber N., Thépot J. (1999), Doping in Sport and Competition Design, *Recherches Economiques de Louvain*, 65 (4), 435-46. [Written in the wake of the Festina affair during the Tour de France 1998, a two-player game is presented based on the following assumptions: a health cost is incurred by athletes using doping; using doping allows any athlete to improve his results during the season; but if both athletes dope, the order of finish remains unchanged; a doped athlete has a positive probability to be caught by a drug test and, hence, to be punished. Four basic factors that act as athlete's incentives to use doping are identified: the efficiency of the test system, the number of events during the season, the range of prizes from sports events, and prevention measures].

El Hodiri M., J. Quirk (1971), An Economic Model of a Professional Sports League, *Journal of Political Economy*, 79 (6), 1302-19. [The first formal model of a professional sports league, in a closed league with profit maximizing teams].

Fedderson A., Maennig W., Zimmermann P. (2008), The Empirics of Key Factors in the Success of Bids for Olympic Games, *Revue d'Economie Politique*, 118 (2), 171-87. [Estimating the probability of city bid campaigns to be successful on the basis of the quantified determinants for a total of 48 bids regarding the summer Olympics from 1992 to 2012. The model correctly predicts 100 per cent of failed bids but results are statistically significant only for 50 per cent of successful bids].

Forrest D., Simmons R. (2006), New Issues in Attendance Demand, *Journal of Sports Economics*, 7 (3), 247-66. [Empirical study of more than 4,000 games to check economic problems of fixture congestion in the league schedules. It is found that televised, midweek Champions League matches involving English Premier League clubs have substantial adverse impacts on lower division Football League gate attendance. Those affected clubs may have a case for compensation for loss of gate revenue from this source].

Forrest D., Simmons R., Buraimo B. (2005), Outcome Uncertainty and the Couch Potato Audience, *Scottish Journal of Political Economy*, 52 (4), 641-61. [Study of the link between outcome uncertainty

and demand in the television market for English football. Both the choice of which games to show and the size of audience attracted by each game have been modeled, exploiting data on audience sizes for games between 1993 and 2002. From the results both the broadcaster and the audience appear interested in competitive balance. A switch from household viewing to watching televised football in pubs and clubs is witnessed. The behavior of the couch potato audience is understandably different from that of live attendance].

Fort R., Fizez J. (2004), eds., *International Sports Economics Comparisons*, Westport: Praeger, 383 pages. [The comparison between the North American and European models of professional team sports is extended to Southern hemisphere (New Zealand) rugby, Australian professional sports, Brazilian soccer, Japanese and Korean baseball].

Fort R., Quirk J. (1995), Cross-subsidization, Incentives, and Outcomes in Professional Team Leagues, *Journal of Economic Literature*, 33 (3), 1265-99. [The most famous version of the standard economic theory of professional team sports leagues].

Frick B. (2009), Globalisation and Factor Mobility: The Impact of Bosman Ruling on Player Migration in Professional Soccer, *Journal of Sports Economics*, 10 (1), 88-106. [Increasing numbers of football players from Eastern Europe, South America, Africa, and Asia have been migrating to the top leagues in Western Europe. Empirical testing shows that, contrary to conventional economic theory, the decreasing playing time that is now available to 'local players' has not yet resulted in an increasing competitive balance of the national teams of countries importing players and those exporting players. The traditional soccer nations from Western Europe and South America have been able to maintain their competitive advantage].

Hill D. (2009), How Gambling Corruptors Fix Football Matches, *European Sport Management Quarterly*, 9 (4), 411-32. [Particular situations are especially susceptible to corruption such as increased betting market liquidity, or where the probability that match fixing will be both successful and undetected, the financial penalty to detection is relatively low or decreasing, and the probability of detection falls. The paper describes in details the technology for approaching, bribing then deeply corrupting soccer players and referees as a sequence of unavoidable decisions].

Hoffmann R., Ging L.C., Ramasamy B. (2004), Olympic Success and ASEAN Countries: Economic Analysis and Policy Implications, *Journal of Sports Economics*, 5 (3), 262-76. [Analysis of the economic determinants of Olympic medal wins for ASEAN countries].

Humphreys B.R., Ruseski J.E. (2009), Estimates of the Dimensions of the Sports Market in the US, *International Journal of Sport Finance*, 4 (2), 94-113. [An attempt at estimating overall economic size of sports markets in the USA. Although the methodology is not based on national accounting techniques like in Europe and Canada, it is a real breakthrough compared to American sports economics which thus far has mainly focused on the production of the professional sports industry rather than on consumption expenditures linked to sport participation].

Jeanrenaud C. (2006), Sponsorship, in: Andreff W., Szymanski S., eds., *Handbook on the Economics of Sport*, Cheltenham: Edward Elgar, 49-58. [Contribution to a handbook about the different facets of sport sponsorship: the objectives, the type of contract, economic significance, the risk of free-riding (ambush marketing), benefits and impact].

Johnson B.K., Groothuis P.A., Whitehead J.C. (2001), The Value of Public Goods Generated by a Major League Sports Team, *Journal of Sports Economics*, 2 (1), 6-21. [Exhibits that the contingent valuation method and including intangible effects in the calculation do not lead for sure to positive result in measuring the value of public goods (civic pride, community spirit) generated by a NHL team, the Pittsburgh Penguins. Their value is far less than the cost of building a new arena. This calls into question the widespread practice of government funding of sports stadiums and arenas because the costs borne by taxpayers exceed the benefits – even intangible – received].

Johnson D., Ali A. (2004), A Tale of Two Seasons: Participation and Medal Counts at the Summer and Winter Olympic Games, *Social Science Quarterly*, 85 (4), 974-93. [One of the articles presenting a modeling of Olympics medal wins based on a production function of medals].

Jones H. (1989), *The Economic Impact and Importance of Sport: A European study*, Council of Europe, Strasbourg, 68 pages. [The first attempt to collect all available data and studies about the economic significance of sport in Europe. Without a strong methodology in this first stage].

Kahane L. (2006), The Reverse-order-of-finish Draft in Sports, in: Andreff W., Szymanski S., eds., *Handbook on the Economics of Sport*, Cheltenham: Edward Elgar, 643-45. [Short and crystal clear description of how works a rookie draft which is also a reverse-order-of-finish draft].

Késenne S. (1996), League Management in Professional Team Sports with Win Maximizing Clubs, *European Journal of Sport Management*, 2, 14-22. [Famous formal modeling of an open professional team sports league with win-maximizing clubs].

Késenne S. (2000), Revenue Sharing and Competitive Balance in Professional Team Sports, *Journal of Sports Economics*, 1 (1), 56-65. [The article shows that revenue sharing improves competitive balance in an open league with win-maximizing clubs].

Késenne S. (2004), Competitive Balance and Revenue Sharing. When Rich Clubs Have Poor Teams, *Journal of Sports Economics*, 5 (2), 206-12. [The article demonstrates that the competitive balance in a win-maximizing league is always worse than in a profit-maximizing league. Then, revenue sharing that aims to cure the imbalance in which a small-market club is dominating the league might not have the desirable effect if the criterion for sharing is the budget of the clubs].

Késenne S. (2005), Do We Need an Economic Impact Study or a Cost-Benefit Analysis of a Sport Event, *European Sport Management Quarterly*, 5 (2), 133-42. [The paper numerically shows the fundamental difference between an economic impact study and a cost-benefit analysis of a sports events. Only an exhaustive cost-benefit analysis can provide all necessary information to yield arguments for the government to subsidize the event].

Kringstad M., Gerrard B. (2007), Beyond Competitive Balance, in: T. Slack, M. Parent, eds., *International Perspectives on the Management of Sport*, Burlington: Elsevier, 149-72. [The article empirically demonstrates that even in a very simple league, competitive balance is a multidimensional concept encompassing win dispersion, performance persistence, and championship concentration].

Kurscheidt M. (2006), The World Cup, in: Andreff W., Szymanski S., eds., *Handbook on the Economics of Sport*, Cheltenham: Edward Elgar, 197-213. [Contribution to a handbook presenting the economics of the soccer World Cup: economic significance, institutional economic structure, evaluation methodology and a cost-benefit model for the 2006 World Cup].

Lavoie M. (2000), The Location of Pay Discrimination in the National Hockey League, *Journal of Sports Economics*, 1 (4), 401-11. [The paper exhibits salary discrimination against French Canadians in NHL, taking both national origin and the location of a player's team in salary regressions. Salary discrimination based on team location appears to be weak but pervasive phenomenon, more surely so in English Canada].

Lazear E., Rosen S. (1981), Rank-order Tournaments as Optimum Labour Contracts, *Journal of Political Economy*, 89, 841-64. [This famous article in labor economics analyzing the screening and hiring process as a rank-order tournament has a number of applications in sports economics, namely the theory of design, economic equilibrium and competitive balance in a professional sports league depending on the allocation of talents].

Leeds M.A (2008), Do Good Olympics Make Good Neighbours?, *Contemporary Economic Policy*, 26 (3), 460-67. [It is established that tourists who otherwise would have come to Colorado have been displaced by the Winter Olympics hosted in Salt Lake City, by showing that expenditure at ski resorts in Colorado rose as a result of the 2002 winter Olympic Games. One consequence may be that cities and states that gain from spill-over effects might want to support bids for events by nearby cities].

Longley N. (2000), The Under-representation of French Canadians in English Canadian NHL League, *Journal of Sports Economics*, 1 (3), 236-56. [The article shows that French Canadians have been under-represented on English Canadian NHL teams, relative to their representation on US-based teams. The hypothesis is that French-English tensions may be resulting in English Canadian teams discriminating against French Canadian players. This hypothesis is given more credence when exhibiting that the degree of under-representation of French Canadians is greater during those NHL seasons when sovereigntist political threats in Quebec are highest].

Maennig W. (2005), Corruption in International Sports and Sport Management: Forms, Tendencies, Extent and Countermeasures, *European Sport Management Quarterly*, 5 (2), 187-225. [The paper tackles the issue of the IOC in 1998-1999 with corruption as regards to the choice of Salt Lake City for hosting

the 2002 winter Games, and systematises its manifestations and tendencies and illustrates the countermeasures that have been taken in reaction. An economic analysis of economic rents derived from corruption in sports leads to the suggestion of measures that reduce them and enhance transparency, in particular monetary disincentives].

Malenfant-Dauriac C. (1977), *L'économie du sport en France: Un compte satellite du sport*, Paris: Cujas, 326 pages. [The first sports satellite account ever built up in the world, for the French sports economy in 1971].

Matheson V. (2009), Economic Multipliers and Mega-Event Analysis, *International Journal of Sport Finance*, 4 (1), 63-70. [The paper shows how using inappropriate multipliers is a primary reason why impact studies of sports mega-events overstate the true economic gains to the hosts of these events with inflated multipliers and exaggerated claims of economic benefits].

Matheson V.A, Baade R.A. (2006), Padding Required: Assessing the Economic Impact of the Super Bowl, *European Sport Management Quarterly*, 6 (4), 353-74. [This study confirms that the Super Bowl contributes approximately one-quarter of what the boosters have promised and that the game could not have contributed, by any reasonable standard of statistical significance, more than \$300 million to host cities economies].

Meyer B., Ahlert G., Schnieder C. (2000), *Die ökonomischen Perspektiven des Sports: Eine empirische Analyse für die Bundesrepublik Deutschland*, Bundesinstitut für Sportwissenschaft, Köln. [A German version of a sports satellite account that must fit with and feed a macroeconometric model of the sports economy].

Nevill A., Atkinson G., Hughes M., Cooper S. (2002), Statistical Methods for Analyzing Discrete and Categorical Data Recorded in Performance Analysis, *Journal of Sports Sciences*, 20 (10), 829-44. [One of the first articles using a Probit model for the estimation of Olympic medal wins].

Novikov A.D., Maximenko A.M. (1972), The Influence of Selected Socio-economic Factors on the Levels of Sports Achievements in the Various Countries, *International Review of Sport Sociology*, 7, 27-34. [A study achieved by Soviet scholars which introduced the political regime variable to explain extremely good performances of communist countries at the Tokyo Summer Olympics 1964].

Paul S., Mitra R. (2008), How Predictable Are the FIFA Worldcup Football Outcomes? An Empirical Analysis, *Applied Economic Letters*, 15, 1171-76. [The article presents a predicting model of the FIFA soccer World Cup outcome. Higher FIFA ranking is significantly associated with higher probability of winning the game. More surprising, countries with more yellow cards were more likely to win the game. Other surprises are that more corner kicks and more ball possession are associated with losing the game. Conclusion: while overall the favorites or higher ranked teams have the winning trend in their favor, there is a number of unexpected match outcomes].

Pedace R. (2008), Earnings, Performance, and Nationality Discrimination in a Highly Competitive Labor Market: An Analysis of the English Professional Soccer League, *Journal of Sports Economics*, 9 (2), 115-40. [A market test is used to determine the existence of nationality discrimination in the English professional soccer league and provides some evidence that players from South America receive preferential labor market treatment, but this is only evident in the Premier (highest) division of the league. This labor market discrimination appears to be a rational response from owners who observe increased attendance with a larger presence of South American players].

Preston I., Szymanski (2003), Racial Discrimination in English Football, *Scottish Journal of Political Economy*, 47(4), 342-63. [Less often studied in European sports, some evidence of racial discrimination in English football is exhibited. The hypothesis that discrimination is attributable to the fans rather than the owners is tested. Presence of discrimination is revealed by examining relationships between attendance, revenues, performance and the proportion of black players in the team. The results exhibit little evidence that the discrimination against black players has its source in fan discrimination].

Preuss H. (2004), *The Economics of Staging the Olympics: A Comparison of the Games 1972-2008*, Cheltenham: Edward Elgar, 291 pages. [The basic book covering all aspects of the Olympic Games economy: financing models, multiplier theory, crowding-out effects, income and employment effects, price level changes, intangible effects, revenues from television rights, marketing, ticket sales, and expenditures of the organizing committee].



Preuss H. (2005), The Economic Impact of Visitors at Major Multi-Sport Events, *European Sport Management Quarterly*, 5 (3), 281-301. [The article proceeds with a theoretical differentiation across persons affected by the event and an evaluation of opportunity costs on people that get crowded out as a result of hosting the event. Interesting findings regard ‘time switchers’ (tourists who wanted to travel to the city/region but at another time) and potential visitors avoiding the host city during the 2002 Commonwealth Games].

Rottenberg S. (1956), The Baseball Players’ Labor Market, *Journal of Political Economy*, 54, 242-58. [The founding father paper, the first one ever published in sports economics which already raises nearly all issues further analysed in the theory of professional team sports leagues].

Saint-Germain M., Harvey J. (1998), Caractéristiques de la grappe industrielle canadienne du sport à partir de simulations, *Revue Juridique et Economique du Sport*, 46, 81-105. [This cluster approach is based on the Canadian input-output table, of the relationships between the sporting goods and services industry and all other industries of the Canadian economy].

Sandy R., Sloane P.J., Rosentraub M.S. (2004), *The Economics of Sport. An International Perspective*, London: Palgrave Macmillan, 347 pages. [It is about a textbook covering major topics in sports economics: club and league objectives, demand and pricing, the labor market for players, discrimination in professional sports, sports broadcasting, sports teams and leagues as cartels, sports and economic development, financing sport facilities, non-team sports, college sports in the USA, government and sports policy].

Schmidt M.B., D.J. Berri (2001), Competitive Balance and Attendance. The Case of Major League Baseball, *Journal of Sports Economics*, 2 (2), 145-67. [The authors contend, in the case of MLB, that the level of competitive balance exhibits that, relative to MLB’s historical record and contrary to the contentions of the media, the 1990s was the most competitive decade on the field of play. The investigation suggests that a relationship between aggregate attendance and a competitive balance does indeed exist across time or with the use of a panel data set].

Shmanske S. (2000), Gender, Skill, and Earnings in Professional Golf, *Journal of Sports Economics*, 1 (4), 385-400. [Examining the relationship between skills and earnings on the two PGA Tour (men) and LPGA Tour (women) tournaments, it appears that men play for bigger purses than do the women. But the men also play more rounds of golf over longer golf courses in front of more spectators and exhibit greater levels of skill than the women. The results show that once skill levels are accounted for, women are not underpaid compared to men].

Shughart W., Tollison R. (1993), Going for the Gold: Property Rights and Athletic Effort in Transitional Economies, *Kyklos*, 46 (2), 263-72. [An explanation of why communist countries were outperforming – winning more medals than they could afford given their GDP per capita and population – based on the privileges accorded to Soviet Bloc’s Olympians in terms of rewards and better lifestyles; and thus why this should not last during the post-communist transition].

SIRC (2010), *Economic Value of Sport in England, 1985-2008*, Sport Industry Research Centre, Sheffield Hallam University. [A Study achieved for the British Sport Council providing a national accounting of the sports economy in terms of revenues and expenditures].

Sloane P. (1971), The Economics of Professional Football: The Football Club as a Utility Maximiser, *Scottish Journal of Political Economy*, 17, 121-46. [This famous article contends that the theory of professional team sports leagues with profit-maximizing teams does not fit with European football and suggests that, in the latter, clubs behave as utility-maximizing entities, including both win-maximizing and a profit constraint or profit maximizing behavior].

Souchaud Y. (1995), *Situation sportive dans les pays moins avancés d’Afrique: bilan*, Division de la Jeunesse et des Activités Sportives, UNESCO, Paris. [A unique survey of sport development and infrastructures in the least developed countries based on a sample of 32 Sub-Saharan countries].

Szymanski S. (2001), Income Inequality, Competitive Balance and the Attractiveness of Team Sports: Some Evidence and a Natural Experiment from English Soccer, *Economic Journal*, 111, F69-F84. [The article shows that while financial inequality among clubs has increased, competitive balance has remained relatively stable and match attendance appears unrelated to competitive balance. Comparing matches in English soccer league championships with FA Cup matches between the same opponents, the FA Cup is

shown to have been much more unbalanced competition than the divisional championships. Attendance at FA Cup matches relative to the corresponding league matches has fallen over the last 20 years].

Szymanski S. (2003), The Economic Design of Sporting Contests, *Journal of Economic Literature*, XLI (4), 1137-87. [Fundamental article providing an authoritative coverage of the economic design of sporting contests, relying on the tournament theory. First it applies the symmetric winner-takes-all contest to individual sporting contests, and then asymmetric contests with more than two players. Then, it turns to a comparative analysis of how team sports leagues are organized and their contests designed in North America and Europe. A core issue is about the relationships between a league's competitive balance, the demand for attendance, and team revenues. Until 2003, such relationships were analyzed in the framework of a standard Walrasian equilibrium model. This paper definitely reshapes the whole issue into an asymmetric Nash equilibrium model].

Tcha M.J. (2004), The Colour of Medals: An Economic Analysis of the Eastern and Western Bloc's Performance in the Olympics, *Journal of Sports Economics*, 5 (4), 311-28. [The article presents a maximization model in which when Eastern bloc pays relatively lower (higher) costs to win medals, the difference in the performance is also supposed to increase (decrease), as the uncertainty in obtaining medals decreases and the cost of medal production in the Western bloc increases. The model predicts that the out-performance of the former communist countries in the Olympic Games would have dissipated, even without the political and economic collapse of those countries, unless they had accelerated their distorted sport policies].

Walker M., & Mondello M.J. (2007), Moving Beyond Economic Impact: A Closer Look at the Contingent Valuation Method, *International Journal of Sport Finance*, 2, 149-60. [The paper suggests that measuring intangible effects generated by public investment in a stadium, together with using the contingent valuation method, is a way out to demonstrate that such investment is worth being supported].

Walton H., Longo A., Dawson P. (2008), A Contingent Evaluation of the 2012 London Olympic Games, *Journal of Sports Economics*, 9 (3), 304-17. [Taking into account intangible effects, including civic pride or the legacy of sport facilities, the article concludes that it is worth hosting the 2012 Olympic Games in London. Using a contingent valuation method, positive intangible effects are associated with the event, and residents outside London are willing to pay toward funding, which is good news that may compensate for the substantial and increasing costs incurred in hosting the 2012 Games].

Zimbalist A. (2001), ed., *The Economics of Sport*, Cheltenham: Edward Elgar, 2 volumes, 1245 pages. [A collection of the best articles in sports economics published until 2000 covering the theory of sports leagues, antitrust analysis of sport leagues, labor markets for talents, discrimination in the labor market, demand estimation, economic impact of sports teams and facilities, analysis of college sports].

### **Biographical Sketch**

**Wladimir Andreff**, Professor Emeritus at the University Paris 1 Panthéon Sorbonne, Honorary President of the International Association of Sport Economists, Honorary President of the European Sports Economics Association, Honorary Member of the European Association for Comparative Economic Studies, former President of the French Economic Association (2007-08), authored and edited 27 books of which 9 in sports economics and 360 articles in economic journals of which 104 in sports economics. Last books in the area: *Economie internationale du sport*, Presses Universitaires de Grenoble, 2010; *Contemporary Issues in Sports Economics*, Edward Elgar, 2011; *Recent Development in the Economics of Sport*, Edward Elgar, 2011. He taught Master courses in sports economics at the Universities of Grenoble, Limoges, Paris 1, and Prague. He also acted as an adviser or a consultant in sports economics with the European Commission's Sport Unit, the Council of Europe and sports ministries in France, the Dominican Republic, the Russian Federation and Slovenia.