Macroeconomic Effects of Sports in Europe

D. Dimitrov, C. Helmenstein, A. Kleissner, B. Moser, J. Schindler

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1 Introduction

Examining the sports sector in Europe, it is without controversy that sports have an enormous economic impact. A number of factors are however responsible for an enormous underestimation of the economic importance of the sports sector.

One problem is that the national statistical offices only focus on a small part of what is generally understood as sports. The statistical offices only measure the sports sector by the categories „operation of sports facilities“ and „provision of other services“. Beyond these sectors, sports related effects can also be found in various other sectors of the European economy, for example in sports production, retail or tourism. This leads to the fact that there is a discrepancy between the statistically covered economic sector “sports” and the common understanding of sports activities. Furthermore and interrelated with this first problem is the issue that there is no standard definition of the sports sector in Europe. Another problem is the general lack of data in these sub-sectors.

In order to develop sports satellite account systems in the countries of the EU-25, it is essential to organize a European initiative working on the development of a European standard for sports. This is the only possibility to enable international comparisons of sports research concerning the economic effects of sports in Europe. To measure the monetary dimension of the total economic effects of sports on the European economy, one solution is the construction of a „sports satellite account“ – in analogy to the already established “tourism satellite account” (TSA) - and its implementation in the national accounts and input-output tables of the countries of the EU-25.

In order to estimate the size of the European sports sector in this study, we extended the methodology of the already developed Austrian sports satellite account to the European level. Our analysis presents impressive results for the economic effects of sports in Europe in terms of employment, purchasing power and value-added. These effects are much higher than those measured and published by the national statistic offices.

Because it was not possible to cover all 25 EU countries in this study a selection of 6 (structurally different) countries of the EU (covering more than 60 % of the European GDP) was made. After this selection, the methodology of the Austrian sports satellite account was adopted to these 6 countries (using the national input-output-tables). As a result, the various effects of sports on the European economy – in terms of the value-added, the purchasing power and the employment effects - were estimated. The economic results of these 6 countries were extrapolated in order to generate the total effects for the EU-25.

This study does not provide detailed results on a country-basis, but rather acts as a motivation for further research in Europe, leading to more exact and detailed results regarding the economic effects of sports in Europe.
2 Developing Sports Satellite Account Systems in Europe

2.1 Satellite systems in the National Accounts

For several economic and societal questions or problems it is necessary to modify the clarity and presentation of the existing statistical data in order to enable better data-analysis and facilitate further calculations.

Specialized tables (more detailed input-output tables) have been developed to cover certain areas of the economy. These extensions of the national accounts thematically "orbit" around the basic tables – that is why they are called "satellite systems" or "satellite accounts".

Haslinger\(^1\) provides a general definition of a satellite account system: "A Satellite Account System is a consistent system of monetary and non-monetary measurement categories made at regular intervals. These should verify conditions and procedures – correlated with important societal requests – in detail."

Another definition is used by Stahmer\(^2\), who notes that satellite systems are specific data systems, whose concepts fit the particular topic but have a close connection to the national accounts in order to enable detailed economic analysis.

A "sports satellite account system" includes all economic effects (gross domestic production, value-added and employment) due to any sports-related activity generated by the various economic sectors and shows them in accordance with the terms of the national accounts.

Accordingly a "sports satellite account system" sets the objective to provide all the economic effects linked to sports-related activities (which are not included in a proper and detailed form in the national accounts) in a consistent form.

A complete economic analysis of sports also includes the sports-related indirect and induced effects caused by the direct sport-related activities. These indirect effects can be sub-divided into:

- Multiplier effects, which were generated by the demand for intermediate inputs of the sports-related sectors,
- changes in the capital stock by investments into the sports sectors and
- income-effects, that arise because sports-related earnings enable higher consumer expenditures.

\(^1\) Haslinger (1988), S. 66
\(^2\) Stahmer (1991) S. 45
These indirect economic effects again lead to multiplier effects and higher earnings. The process thus repeats itself. To quantify the total economic impact of sports it is necessary to sum up the direct effects and the multiplier effects.

Due to the complete compatibility of the satellite account with the national accounts, a comparison of important macroeconomic aggregates of the sports sector (gross value-added, employment, et al.) with macroeconomic aggregates of other economic sectors as well as a country based comparison of the effects of sports are made possible.

2.2 Input-Output Table of Sports

To establish sports satellite account systems in the EU-25 countries and to use them in order to analyze the effects of sports onto the national economies, it is useful to combine them with the particular national input-output-tables – leading to an “Input-Output-Table for Sports”.

Input-output-analysis is one of the most-known and most-used tools of economic analysis. Input-output-models are systems of linear equations, where each of them describes a different product-allocation of the economy. An input-output-table describes the structure and the various relations between the different sectors of an economy and helps to quantify the causally connected multiplier effects for the national economy.

An implementation of a sports satellite account system and a combination with the particular national input-output-table results in a methodic tool that shows the sports-related activities and their various links with the economy. Hence a sports satellite account system should be a basis (or an economic tool) to answer important (sports-related) political questions within the European society in a scientific way. A sports satellite account system, respectively an input-output-table sports, was used for estimating the effects of sports on the value-added, the purchasing power and the labor market in Europe.

2.3 Analysis of the Economic Effects of Sports

On the basis of the input-output-table of sports, the sports-related impact on the national economy can be determined. These further calculations result in the sports-related GNP (gross national product) of the various economic sectors – as well as the direct and indirect sports-related effects (multiplier effects) on the value-added, the purchasing power and the labor market.

2.3.1 Computation of the Value-Added Effects of Sports

The value-added of a sector is the difference between total production and the inputs needed. To quantify these direct value-added effects, information about the income and expenditure as well as about the investments into sports is necessary. By subtracting the payments for the input goods from the expenditures, the direct value-added effect is obtained. By applying the appropriate multiplier, the direct and indirect value-added effects are obtained.
2.3.2 Computation of the Purchasing Power Effects of Sports

Purchasing power effects are induced by expenditures in the region and by the effective net incomes. For the quantification of the direct effects on purchasing power, the expenditures for investments and material expenditures as well as effective net incomes are needed. The (demand) effective net income is derived according to the following scheme:

Table 1: Calculation Scheme for Effective Income

<table>
<thead>
<tr>
<th></th>
<th>Staff costs</th>
<th>Expenditures (taxes, insurance)</th>
<th>Total net income</th>
<th>Savings</th>
<th>Shopping tourism</th>
<th>Effective net income</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-</td>
<td></td>
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<td>-</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: SpEA, 2006

2.3.3 Computation Method for the Employment Effects of Sports

Two different methods can be used in order to calculate the direct employment effects – depending on the available data basis:

Method 1 uses the average personnel expenditures per year and per person to calculate the effects. Method 2 on the other hand uses a common “employment structure” of the analyzed sector proportional to the value-added.

Yet another method for estimating the sports-related employment effects uses the labor productivity. The marginal labor productivity is defined as the ratio of the change of productivity and the change of work (employees or working hours). The marginal labor productivity indicates the change of productivity per additional employee. The inverse ratio, the so-called work-coefficient, is a measure for the number of persons employed in the production process.

For an extensive evaluation of the employment effects, further factors have to be considered. For example, the occupation structure is an important issue. The occupation elasticity is usually larger for workers than for employees, so that an expansion of the construction activities will lead to a significant increase in the number of workers. A significant increase in the number of employees is however not to be expected. Another important factor is the extent of capacity utilization in the appropriate sectors. The full employment effect is only realized for a 100 per cent capacity utilization and an appropriate increase in the capacities due to the projected extra demand. Beyond that, the tendency exists to compensate a non-permanent demand by overtime and extra shifts rather than by an additional employment of workers.
2.3.4 Computation of Multiplier Effects

For each final expenditure, multiplier effects are assumed, since each business needs unfinished-goods as well as raw materials and supplies of other sectors for the production of its products and/or services. Multipliers derived from the input-output table reflect the integration of the various sectors. The multiplier effects are calculated as the sum of the indirect effects onto the direct effects. The size of the multipliers primarily depends on the structure of the economic linkage of the source sector on to the remaining sectors, i.e. the sectors to which sector personal and material expenditures flow and how these are passed on in follow-up orders. It has to be considered that national businesses as well as foreign countries are involved in the supply chain, but primary effects for a special country depend only on import adjusted values.
3 Economic Definition of Sports

The sports economy as a whole is not a separate statistically measured sector, but is part of various industries and economic sectors. The national statistical offices measure sports effects by including the categories „operation of sports facilities“ and „provision of other services“ - others like sports production, sports retail and sports tourism are ignored.

In order to develop sports satellite account systems in the EU-25 countries, it is essential to establish exact definitions of sports in an economic sense. In this context the main questions are „What is sports?“ and „Which direct effects of sports should be included in a sports satellite account system?“.

An Europe-wide definition of „sports“ has not been established yet. Thus previous results and analyses of sports are not comparable between the various countries.

The “Austrian Approach” to define sports divides the sports sector into three different sectors:

- **Sports statistically**
- **Sports in a narrow sense**
- **Sports in a broader sense**

The following figure shows a European estimation of the size (in terms of value-added) of the 3 types of sports-definitions:

**Figure 1: Definition of Sports**

![Diagram showing the relationships between different definitions of sports](image)
3.1.1 Sports Statistically

Sports according to the statistical definition includes all sports-related activities as recorded by EUROSTAT (NACE 92.6) – viz. the categories „operation of sports facilities“ (NACE 92.61) and „provision of other services of sports“ (NACE 92.62).

The sector “operation of sports facilities” includes the operation of swimming pools and stadiums (NACE 92.61.01) and the operation of other sports facilities (NACE 92.61.2), i.e. the operation of facilities for sports events, e.g. football stadiums, golf courses, boxing stadiums, winter sports stadiums or athletics stadiums.

The sector “provision of other services of sports” includes all activities of sportsmen, referees, timekeepers, sports teachers, coaches, etc.

3.1.2 Sports in a Narrow Sense

*Sports in a narrow sense* include all activities directly connected to the active conduct of sports (in addition to the already described effects of the definition *Sports statistically*).

Therefore the following sectors are summarized in the definition *Sports in a narrow sense*:

- sports article production
- sports article retail
- sports education

The sector “sports article production” includes the production of skis, bindings and ski poles used for winter sports and the production of water-skis, surfboards and other water sports equipment as well as the production of snowboards and other sports equipment.

The sector “sports article retail” (wholesale and retail) includes trading with bicycles, sports and camping equipment.

To cover the sector “sports education”, the sports-related effects on the various education levels (primary school, secondary school, etc.) of the particular countries have to be measured.

3.1.3 Sports in a broader sense

*Sports in a broader sense* additionally includes various categories, such as “sports tourism”, the “sports health sector”, “sports advertising”, “sports entertainment”, “sports media” or “sports insurance” – sectors which have an indirect connection to sports-related activities.
This project considers not only direct sports activities and their effects on the European economy but also the indirect sports-related activities, a so called value-added-network of the sports economy (figure 2):

**Figure 2: Value-added Network of Sports**

<table>
<thead>
<tr>
<th>PRIVATE HOUSEHOLDS</th>
<th>ABROAD</th>
<th>DOWNSTREAM SECTORS</th>
<th>STATE</th>
<th>SPORTS SECTOR AND ITS SUB-SECTORS</th>
<th>UPSTREAM SECTORS</th>
<th>COMPANIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual sports activities</td>
<td>Radio &amp; TV</td>
<td>Sports events</td>
<td>Special sectors</td>
<td>Sports clubs and organisations</td>
<td>Advertising, etc.</td>
<td>Profitability</td>
</tr>
<tr>
<td>Expenditures for sports</td>
<td>Printmedia</td>
<td>School sports</td>
<td>Sports promotion and sport expenditures</td>
<td>Operation of sports facilities</td>
<td>Sports promotion and sponsorship</td>
<td></td>
</tr>
<tr>
<td>Private Sponsoring</td>
<td>Gesundheitswesen</td>
<td>Handicapped and senior sports activities</td>
<td></td>
<td></td>
<td>Intermediate Inputs</td>
<td></td>
</tr>
<tr>
<td>Labour market</td>
<td></td>
<td>Sports courses and education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unsalaried work in the sports sector</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Profitability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: SpEA, 2006

An already established standard for the sectors of the economy – NACE – is a useful basis for a comprehensive definition of the sports sector on a European level and so is used to create the sports-specific input-output-tables. Based on this well structured classification of the economy this project filtered those sections, which can be considered as sports-relevant NACE-sectors.

The following table shows a list of all NACE-categories, which include (or could include) sports-related effects on an economy. The category terms used in this list describe the content of the higher-ranking main category on a 2–digit–level. The particular sports-related share has to be calculated or estimated separately.

**Table 2: Included Sports-Related Categories of the Input-Output-Tables**

<table>
<thead>
<tr>
<th>NACE-Code</th>
<th>Sports-related categories</th>
<th>&quot;Statistically&quot;</th>
<th>&quot;In a narrow sense&quot;</th>
<th>&quot;In a broader sense&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Agriculture, hunting and related service activities</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Manufacture of food products and beverages</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>NACE-Code</td>
<td>Sports-related categories</td>
<td>&quot;Statistically&quot;</td>
<td>&quot;In a narrow sense&quot;</td>
<td>&quot;In a broader sense&quot;</td>
</tr>
<tr>
<td>-----------</td>
<td>------------------------------------------------------------------------------------------</td>
<td>-----------------</td>
<td>---------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>17</td>
<td>Manufacture of textiles</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>18</td>
<td>Manufacture of wearing apparel; dressing and dyeing of fur</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Publishing, printing and reproduction of recorded media</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Manufacture of chemicals and chemical products</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>25</td>
<td>Manufacture of rubber and plastic products</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Manufacture of fabricated metal products, except machinery and equipment</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Manufacture of machinery and equipment n.e.c.</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>Manufacture of electrical machinery and apparatus n.e.c.</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>Manufacture of radio, television and communication equipment and apparatus</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>33</td>
<td>Manufacture of medical, precision and optical instruments, watches and clocks</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>34</td>
<td>Manufacture of motor vehicles, trailers and semi-trailers</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>Manufacture of other transport equipment</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>Manufacture of furniture; manufacturing n.e.c.</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>40</td>
<td>Electricity, gas, steam and hot water supply</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>Collection, purification and distribution of water</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>Construction</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>50</td>
<td>Sale, maintenance and repair of motor vehicles and motorcycles; retail sale services of automotive fuel</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>51</td>
<td>Wholesale trade and commission trade, except of motor vehicles and motorcycle</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>52</td>
<td>Retail trade, except of motor vehicles and motorcycles; repair of personal and household goods</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>55</td>
<td>Hotels and restaurants</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>60</td>
<td>Land transport; transport via pipelines</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>62</td>
<td>Air transport</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>63</td>
<td>Supporting and auxiliary transport activities; activities of travel agencies</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>64</td>
<td>Post and telecommunications</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>65</td>
<td>Financial intermediation, except insurance and pension funding</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>66</td>
<td>Insurance and pension funding, except compulsory social security</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>NACE-Code</td>
<td>Sports-related categories</td>
<td>&quot;Statistically&quot;</td>
<td>&quot;In a narrow sense&quot;</td>
<td>&quot;In a broader&quot; sense</td>
</tr>
<tr>
<td>-----------</td>
<td>------------------------------------------------------------</td>
<td>-----------------</td>
<td>---------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>71</td>
<td>Renting of machinery and equipment without operator and of personal and household goods</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>74</td>
<td>Other business activities</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>80</td>
<td>Education</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>85</td>
<td>Health and social work</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>92</td>
<td>Recreational, cultural and sporting activities</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>93</td>
<td>Other service activities</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Source: SpEA, 2006
4 Macroeconomic Effects of Sports in Europe

Establishing a sports satellite account system is a highly time- and cost-intensive task, as numerous experiences in Austria have shown. As already mentioned in the previous chapter, the analysis of this project should be the basis for further and more detailed national research and should enable the implementation of various national sports satellite account systems. The result of this analysis and estimation is summarized in the following chapter and should serve as an “initial ignition” of a European-wide initiative for more detailed national studies.

In this study a selection of 6 (structurally different) countries of the EU-25 was made in order to cover more than 60 % of the European GDP (2003, Table 3) and to provide the basis for a realistic estimation of the sports-related effects on the economy of the EU-25 as a whole. The analysis of this project includes:

- Germany
- Finland
- France
- Great Britain
- Austria
- Slovenia

Table 3 summarizes the Gross National Products of these countries and shows their share in the total economy of the EU-25.

Table 3: GDP of the Analyzed Countries, in million €, share in EU-25

<table>
<thead>
<tr>
<th>Country</th>
<th>GDP</th>
<th>Share in EU-25 in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>2.163.400</td>
<td>21,75</td>
</tr>
<tr>
<td>France</td>
<td>1.585.172</td>
<td>15,94</td>
</tr>
<tr>
<td>Austria</td>
<td>226.968</td>
<td>2,28</td>
</tr>
<tr>
<td>Slovenia</td>
<td>24.860</td>
<td>0,25</td>
</tr>
<tr>
<td>Finland</td>
<td>143.807</td>
<td>1,45</td>
</tr>
<tr>
<td>Great Britain</td>
<td>1.598.172</td>
<td>16,07</td>
</tr>
<tr>
<td><strong>Total (6 countries)</strong></td>
<td><strong>5.706.819</strong></td>
<td><strong>57,38</strong></td>
</tr>
<tr>
<td><strong>EU-25</strong></td>
<td><strong>9.946.230</strong></td>
<td><strong>100,00</strong></td>
</tr>
</tbody>
</table>

Source: EUROSTAT, SpEA, 2006
In the context of this study an extrapolation of the sports-related effects on the total economy in Europe is possible - based on the calculation including these six countries mentioned above.

4.1 Data Survey, Data Collection and Preparation

For each of the selected countries a broad data basis had to be developed to achieve the main purpose of this study – a realistic estimation of the economic effects of sports onto the European economy.

Therefore the updated input-output-tables of each country were used as a starting point for any further research. These input-output-tables were available in the EUROSTAT-database or could be provided by the national statistical offices. During this process of data research various problems occurred because of differences in the relevant basic years of the various input-output-tables.

For example: Finland could provide an input-output-table updated in the year 2002. In Great Britain the newest available input-output-table was published in the year 1995. Furthermore the most recently researched sports-related data were available for the year 2003. This is why in a first step all the input-output-tables of the six selected countries were (simultaneously) updated to the year 2003.

The next step was to find appropriate values for the defined sports-related categories of the six countries. The problem was a massive lack of data – so in many cases secondary literature and estimates had to be used as an important information source. To fill the gaps in the list of the sports-related sectors of the various countries, the EUROSTAT-database and the databases of the national statistical offices were used and useable information was taken in order to implement the different sports satellite account systems.

In addition to these data sources the outcomes of the already available sports satellite account system in Austria were used as a further data base. The Austrian estimates for the different sports-related categories were used to calculate the sports-related effects in the same category in the other countries. Additional (and therefore time-consuming) research was focused on the most important categories (e.g. sports tourism).

The result of this capacious research is a broad data base for the estimation of the economic effects of sports on the European economy. The most important data sources (national statistical offices, data bases...), which have been used in this work, are summarized in the following table:
Table 4: Information Sources and Websites

<table>
<thead>
<tr>
<th>Institution</th>
<th>Websites</th>
</tr>
</thead>
<tbody>
<tr>
<td>EUROSTAT</td>
<td><a href="http://epp.eurostat.cec.eu.int">http://epp.eurostat.cec.eu.int</a></td>
</tr>
<tr>
<td>Statistisches Bundesamt Deutschland</td>
<td><a href="http://www.destatis.de/">http://www.destatis.de/</a></td>
</tr>
<tr>
<td>Verband der Deutschen Sportartikel-Industrie</td>
<td><a href="http://www.vds-sportfachhandel.de">http://www.vds-sportfachhandel.de</a></td>
</tr>
<tr>
<td>German National Tourist Board</td>
<td><a href="http://www.german-tourism.de">http://www.german-tourism.de</a></td>
</tr>
<tr>
<td>Ministry of Labor, Finnland</td>
<td><a href="http://www.mol.fi/english/">http://www.mol.fi/english/</a></td>
</tr>
<tr>
<td>Taloussanomat newspaper</td>
<td><a href="http://www.taloussanomat.fi/etusivu.asp">http://www.taloussanomat.fi/etusivu.asp</a></td>
</tr>
<tr>
<td>Finnish Tourist Board</td>
<td><a href="http://www.visitfinland.com/">http://www.visitfinland.com/</a></td>
</tr>
<tr>
<td>National Statistics online</td>
<td><a href="http://www.statistics.gov.uk/">http://www.statistics.gov.uk/</a></td>
</tr>
<tr>
<td>SportEngland.org</td>
<td><a href="http://www.sportengland.org/">http://www.sportengland.org/</a></td>
</tr>
</tbody>
</table>

Source: SpEA, 2006

4.2 Economic outcomes on a European level

This chapter illustrates the economic effects of sports onto the European economy. The different aspects of the outcome are analyzed in detail – the sports-related value-added effects, the sports-related purchasing power effects as well as the employment effects of sports.

4.2.1 Effects on value-added

The economic effects are calculated separately for all 3 definitions of sports, “sports statistically”, “sports in a narrow sense” and “sports in a broader sense”.

4.2.1.1 Sports Statistically

The results of this study show that the activities involved in „sports statistically“ lead to direct value-added effects of 41 billion €. This accounts for 0.46 % of the European value-added. More than 90% (39 billion €) of these sport-related effects have been generated by the countries of the EU-15.

Additional to the direct value-added effects of sports, the multiplier effects need to be considered. This results in total effects of sports (direct plus indirect effects) of 45 billion € (0.51 % of the value-added in the countries of the EU-25) or 43 billion € (0.51 % of the value-added in the countries of the EU-15) value-added.

4.2.1.2 Sports in a Narrow Sense

The direct effects of sports in a narrow sense amount to 259 billion € (2.91 %) value-added in Europe (in the countries of the EU-25). The effects estimated for the countries of the EU-15 lead to direct effects on the European value-added of 247 billion €.
The total effects (sum of the direct and indirect effects of sports) account for 313 billion €, that is 3.52 % of the total European value-added. The countries of the EU-15 generate sports-related total effects of 299 billion € value-added.

4.2.1.3 Sports in a Broader Sense

The analysis in this study leads to the result that *sports in a broader sense* is accountable for direct effects on the European value-added (EU-25) of 324 billion € (3.65 %). In the countries of the EU-15 sports-related direct effects of 310 billion € value-added are generated.

*Sports in a broader sense* accounts for direct and indirect effects (including multiplier effects) on the total European value-added of 407 billion € (in the countries of the EU-25) or 389 billion € (in the countries of EU-15). That means that 4.58 % of the total value-added in Europe is generated by sports in a broader sense.

The following figures illustrate the direct and indirect effects of sports on the value-added of the EU-25 and the EU-15 (figure 3 and figure 4).

**Figure 3: Direct and Indirect Effects of Sports onto the Value-Added, EU-25, 2003**
4.2.2 Effects on Purchasing Power

Direct effects on the European purchasing power are induced by material expenses in the region and by the effective net incomes.

4.2.2.1 Sports Statistically

In this work direct purchasing power effects are calculated as follows: Sports statistically generates effects of 58 billion € onto the purchasing power of the countries of the EU-25 (55 billion € in the countries of the EU-15) and total effects (including multiplier effects) of 62 billion € (59 billion €, EU-15).

4.2.2.2 Sports in a Narrow Sense

Sports in a narrow sense are accountable for 242 billion € (231 billion €, EU-15) of additional purchasing power in the European economies per year. This is equal to a total purchasing power effect of 296 billion € (283 billion €, EU-15) onto the European economy per year.

4.2.2.3 Sports in a Broader Sense

Impressive results can be shown for the definition of sports in a broader sense. Additional direct effects on the European economy of 307 billion € are generated by sports-related activities. When indirect effects are also included, 391 billion € (373 billion €, EU-15) total purchasing power is generated by the sports sector in the European economy.

The following figures sum up the estimations of the effects of sports on the purchasing power in the European countries (direct and indirect purchasing power effects in EU-25 and EU-15).
4.2.3 Effects on labor market

In order to calculate the direct employment effects of sports in Europe, a common “employment structure” of the analyzed sector proportional to the value-added is used. Again the results of the estimations of this study are presented for the 3 different definitions of sports developed in the previous chapter.
4.2.3.1 Sports Statistically

*Sports statistically* accounts for 1,585,354 additional jobs or 0.83 % of the total employment in the countries of the EU-25 (1,514,503 additional jobs or 0.8 % in the countries of the EU-15). The total amount of jobs generated by the sports sector in the European countries (direct plus indirect effects) results in 2,656,379 additional jobs (2,537,663 jobs, EU-15) or a share of 1.4 % (1.33 %, EU-15) of the economically active population in Europe.

The multiplier effects included in the indirect effects of sports on the labor market are also considered in this work and consist of the indirect and induced effects. The indirect effects on the labor market are generated by the increased demand for intermediate inputs. The company has to purchase intermediate inputs from a supplier and therefore additional jobs are created. Furthermore induced effects are generated by additional consumer activities of these new employees.

4.2.3.2 Sports in a Narrow Sense

Our calculations lead to the following results: additional 8,184,392 jobs or 4.3 % employment is generated in the EU-25 countries by the sports-related activities according to the definition *sports in a narrow sense* (7,818,624 jobs or 4.11 % additional jobs in the countries of the EU-15). Additional to the direct effects, this analysis includes the multiplier effects of sports-related activities, resulting in 11,968,213 additional jobs (11,433,343, EU-15) generated by the sector sports in a narrow sense in Europe. These sports-related effects generate 6.29 % (6.01 %, EU-15) of the total European employment.

4.2.3.3 Sports in a Broader Sense

The definition of *sports in a broader sense* leads to 10,263,486 directly generated jobs in the EU-25 or 9,804,801 jobs in the EU-15. This is 5.4 % or 5.15 % of total employment in Europe. The total effects of *sports in a broader sense* (including the multiplier effects) account for 15,022,660 additional jobs (14,351,283, EU-15). This is a share of 7.9 % of the European labor market in the EU-25 or 7.54 % in the EU-15. Thus the sports sector is a highly employment-intensive sector. Its employment potential should be made use of.

These effects of sports in a broader sense on the European labor market are illustrated by the following figures:
Figure 7: Direct and Indirect Effects of Sports onto the Labor Market, EU-25, 2003

Source: SpEA, 2006

Figure 8: Direct and Indirect Effects of Sports onto the Labor Market, EU-15, 2003

Source: SpEA, 2006
4.2.4 Summary of the Effects of Sports onto the European Economy

Table 5: Value-added Effects of Sports in the EU-25, 2003

<table>
<thead>
<tr>
<th></th>
<th>direct va-effect</th>
<th>multiplier va-effect</th>
<th>total va-effect</th>
<th>in % of total economy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sports statistically</td>
<td>41</td>
<td>4</td>
<td>45</td>
<td>0.46%</td>
</tr>
<tr>
<td>Sports in a narrow sense</td>
<td>259</td>
<td>54</td>
<td>313</td>
<td>2.91%</td>
</tr>
<tr>
<td>Sports in a broader sense</td>
<td>324</td>
<td>83</td>
<td>407</td>
<td>3.65%</td>
</tr>
</tbody>
</table>

Source: SpEA, 2006

Table 6: Value-Added Effects of Sports in the EU-15, 2003

<table>
<thead>
<tr>
<th></th>
<th>direct va-effect</th>
<th>multiplier va-effect</th>
<th>total va-effect</th>
<th>in % of total economy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sports statistically</td>
<td>39</td>
<td>3</td>
<td>43</td>
<td>0.46%</td>
</tr>
<tr>
<td>Sports in a narrow sense</td>
<td>247</td>
<td>52</td>
<td>299</td>
<td>2.91%</td>
</tr>
<tr>
<td>Sports in a broader sense</td>
<td>310</td>
<td>79</td>
<td>389</td>
<td>3.65%</td>
</tr>
</tbody>
</table>

Source: SpEA, 2006

Table 7: Purchasing Power Effects of Sports in the EU-25, 2003

<table>
<thead>
<tr>
<th></th>
<th>direct purchasing power-effect</th>
<th>multiplier purchasing power-effect</th>
<th>total effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sports statistically</td>
<td>58</td>
<td>4</td>
<td>62</td>
</tr>
<tr>
<td>Sports in a narrow sense</td>
<td>242</td>
<td>54</td>
<td>296</td>
</tr>
<tr>
<td>Sports in a broader sense</td>
<td>307</td>
<td>84</td>
<td>391</td>
</tr>
</tbody>
</table>

Source: SpEA, 2006

Table 8: Purchasing Power Effects of Sports in the EU-15, 2003

<table>
<thead>
<tr>
<th></th>
<th>direct purchasing power-effect</th>
<th>multiplier purchasing power-effect</th>
<th>total effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sports statistically</td>
<td>55</td>
<td>4</td>
<td>59</td>
</tr>
<tr>
<td>Sports in a narrow sense</td>
<td>231</td>
<td>52</td>
<td>283</td>
</tr>
<tr>
<td>Sports in a broader sense</td>
<td>293</td>
<td>80</td>
<td>373</td>
</tr>
</tbody>
</table>

Source: SpEA, 2006
Table 9: Labor Market Effects of Sports in the EU-25, 2003

<table>
<thead>
<tr>
<th></th>
<th>direct labor market effect</th>
<th>indirect labor market effect</th>
<th>total effect</th>
<th>in % of total economy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sports statistically</td>
<td>1,585,354</td>
<td>1,071,025</td>
<td>2,656,379</td>
<td>0.83%</td>
</tr>
<tr>
<td>Sports in a narrow sense</td>
<td>8,184,393</td>
<td>3,783,821</td>
<td>11,968,213</td>
<td>4.30%</td>
</tr>
<tr>
<td>Sports in a broader sense</td>
<td>10,263,486</td>
<td>4,759,174</td>
<td>15,022,660</td>
<td>5.40%</td>
</tr>
</tbody>
</table>

Source: SpEA, 2006

Table 10: Labor Market Effects of Sports in the EU-15, 2003

<table>
<thead>
<tr>
<th></th>
<th>direct labor market effect</th>
<th>indirect labor market effect</th>
<th>total effect</th>
<th>in % of total economy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sports statistically</td>
<td>1,514,503</td>
<td>1,023,160</td>
<td>2,537,663</td>
<td>0.80%</td>
</tr>
<tr>
<td>Sports in a narrow sense</td>
<td>7,818,625</td>
<td>3,614,718</td>
<td>11,433,343</td>
<td>4.11%</td>
</tr>
<tr>
<td>Sports in a broader sense</td>
<td>9,804,802</td>
<td>4,546,482</td>
<td>14,351,284</td>
<td>5.15%</td>
</tr>
</tbody>
</table>

Source: SpEA, 2006
5 Executive Summary

Satellite System Sports for Europe

- For several economic and societal questions, it is necessary to modify the clarity and presentation of existing statistical data – to enable better data-analysis and for further calculations. Special tables (more detailed input-output tables) have been developed to cover certain areas of the economy. These extensions of the national accounts thematically “orbit” around the basic tables – that is why they are called “satellite systems” or “satellite accounts”.

- A “sports satellite account system” includes all economic effects (gross domestic production, value-added and employment) generated by any sports-related activity in the various economic sectors and presents them in accordance with the set-up of the national accounts.

- A complete economic analysis of sports includes the indirect and induced effects caused by the direct sport-related activities. These indirect effects can be sub-divided into multiplier effects, which are generated by the demand of the sports-related sectors for intermediate inputs, changes in the capital stock by investments into the sports sectors and so called income-effects, that arise because sports-related earnings enable higher consumer expenditures.

- Input-output-tables describe the structure and the various relations between the different sectors of the economy and therefore help to quantify the causal connected multiplier effects on the national economy.

- An implementation of a satellite system sports and a combination with the particular national input-output-table results in a methodic tool that represents sports-related activities and their various links with the economy as a whole.

- Hence a satellite account sports should be a basis (or an economic tool) to answer urgent (sports-related) political questions within the European society in a scientifically ambitious form.

Sports in Europe – an Economic Definition

- A Europe-wide definition of „sports“ has not been established yet. Thus previous results and analyses of sports are not comparable between the different countries. The “Austrian Approach” to define sports divides the sports sector into three different sectors: “Sports statistically”, “Sports in a narrow sense” and “Sports in a broader sense”.

- A Europe-wide definition of „sports“ has not yet been established. Thus previous results and analyses of sports are not comparable between different countries. In the context of the calculations of this work it was useful to divide the sports sector into three different
categories: “sports statistically,” “sports in a narrow sense” and “sports in a broader sense”.

- **Sports** according to the *statistical definition* include all sports-related activities as recorded by EUROSTAT (NACE 92.6) – viz. the categories „operation of sports facilities and „provision of other services of sports“.

- **Sports in a narrow sense** include all activities directly connected to the active conduct of sports (in addition to the already described effects of the category *sports statistically*), that is sports-related agricultural activities, sports article production, sports retail and sports education.

- **Sports in a broader sense** additionally includes various categories, such as “sports tourism”, the “sports health sector”, “sports advertising”, “sports entertainment”, “sports media” or “sports insurance” – sectors which have an indirect connection to sports-related activities.

**Macroeconomic Effects of Sports in Europe**

**Value-Added**

- The results of this study show that sports according to the definition *sports statistically* lead to direct value-added effects of 41 billion €. This accounts for 0.46 % of the European value-added. More than 90% (39 billion €) of these sport-related effects are generated by the countries of the EU-15. Additional to the direct value-added effects of sports multiplier effects need to be included. The total effects of sports (direct plus indirect effects) amount to 45 billion € value-added (this is 0.51 % of the value-added in the countries of the EU-25) or 43 billion € value-added (this is 0.51 % of the value-added in the countries of the EU-15).

- The direct effects of *sports in a narrow sense* amount to 259 billion € or 2.91 % of the value-added in Europe (in the countries of the EU-25). The effects estimated for the countries of the EU-15 lead to direct effects on the European value-added of 247 billion €. The total effects (sum of direct and indirect effects of sports) account for 313 billion €, that is 3.52 % of total European value-added. The countries of the EU-15 generate sports-related total effects on the value-added of 299 billion €.

- The analysis in this study leads to the result that *sports in a broader sense* is accountable for direct effects on the European value-added (EU-25) of 324 billion € (3.65 %). In the countries of the EU-15 sports-related direct effects of 310 billion € are generated for the European value-added. *Sports in a broader sense* account for direct and indirect effects (including multiplier effects) on the total European value-added of 407 billion € (in the countries of the EU-25) or 389 billion € (in the countries of EU-15). That means that 4.58 % of the total value-added in Europe is generated by sports in a broader sense.
**Purchasing Power**

- Direct purchasing power effects are as follows: *Sports statistically* generate effects of 58 billion € on the purchasing power in the countries of the EU-25 (55 billion € in the countries of the EU-15) and total effects (including multiplier effects) of 62 billion € (59 billion € in the EU-15).

- *Sports in a narrow sense* are accountable for 242 billion € (231 billion €, EU-15) of additional purchasing power in the European economies per year. This is equal to a total purchasing power effect of 296 billion € (283 billion €, EU-15) on the European economy per year.

- Impressive results can be shown for the definition of *sports in a broader sense*. Additional direct effects on the European economy of 307 billion € are generated by sports-related activities – including indirect effects that amount to 391 billion € (373 billion €, EU-15) total purchasing power generated by the sports sector in the European economy.

**Labor Market**

- *Sports statistically* account for 1,585,354 additional jobs or 0.83 % of the total employment in the countries of the EU-25 (1,514,503 additional jobs or 0.8 % in the countries of the EU-15). The total amount of jobs generated by the sports sector in the European countries (direct plus indirect effects) results in 2,656,379 additional jobs (2,537,663 jobs, EU-15) or a share of 1.4 % (1.33 %, EU-15) of the economically active population in Europe.

- The calculations of this work leads to the following results: additional 8,184,392 jobs or 4.3 % were generated in the countries of the EU-25 by the sports-related activities included in the *sports in a narrow sense* (7,818,624 jobs or 4.11 % in the countries of the EU-15). Additional to the direct effects, this analysis includes the multiplier effects of sports-related activities – resulting in 11,968,213 additional jobs (11,433,343, EU-15) generated by the sector sports in a narrow sense in Europe. These sports-related effects generate 6.29 % (6.01 %, EU-15) of the total European labor market.

- The definition of *sports in a broader sense* leads to 10,263,486 (9,804,801, EU-15) directly generated jobs (5.4 % / 5.15 % of total employment in Europe). The total effects of *sports in a broader sense* (including the multiplier effects) account for 15,022,660 additional jobs (14,351,283, EU-15) – a share of 7.9 % (7.54 %) of the European labor market. Thus the sports sector is a highly employment-intensive sector - its employment potential should be made use of.
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