

# Sport Satellite Account in the Czech Republic<sup>1</sup>

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## Abstract

In July 2007, the European Commission published the White Paper on Sport. It declared the need for estimation of sport satellite accounts of all EU member states. For constructing sport satellite account it is necessary to define “sport” and subsequently determine the suitable industry by the NACE classification. It is vital to define the right indicators which further develop the published NACE macroeconomic data. It is also crucial to describe the product flows associated with sport activities (household consumption, intermediate consumption) through Supply-use tables.

This paper focuses on the estimation of the satellite account of sports for the Czech Republic. It deals with all pros and cons of the validity of the dataset provided by the Czech Statistical Office. The paper describes the difficulties with collecting all the information needed and it offers preliminary results of the satellite account of sport for the Czech Republic.

Key Words: satellite account, NACE, CPA

## 1. Foreword

It is obvious that sport represents a significant part of economy of a country. Until 2006 the influence of sport on economy was not quantified. In 2006, the EU Working Group ‘Sports and Economics’ with the assignment to describe the influence of sport on economy was established. This working group addressed the statistical methods to evaluate the importance of sport in economically meaningful way. They agreed on the “Vilnius definition of sport” as the basis for collecting the dataset for the compilation of the sport satellite account.

Only a few countries compile the sport satellite accounts. This paper was inspired by the report of sports satellite account for the United Kingdom. The report presents the result for the UK in the period between 2004 and 2006. The economy in sport is presented in terms of consumer spending, gross value added and employment figures. The Czech Republic belongs to the countries of the European Union that have not compiled this type of accounts yet. The aim of this paper is to introduce our approach based on concepts of satellite accounts and to describe the issues relating to the data collection in the Czech Republic. The article also contains the preliminary results for the Czech Republic.

## 2. Methodology

Satellite accounts present an addition or supplement to the information contained in the national accounts. The purpose of satellite accounts is going deeper in description and

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analyzing the economic importance of some branches which are described in national accounts in a required detail<sup>2</sup>. One of these branches is sport.

To compile sport satellite account, it is necessary to define sport. There are two basic definitions of sport. One of them is the definition of sport according to the Council of Europe in which the sport represents “all forms of physical activity which, through casual or organized participation aim at expressing or improving physical fitness and mental well-being, forming social relationships or obtaining results in competition at all levels”<sup>3</sup>. The Vilnius definition of sport consists of three parts:

- statistical definition – in NACE rev. 2.0 it represents 93.1 Sports activities
- narrow definition – statistical definition plus all businesses which are necessary in order to be able do sport (e.g. production, retail of sport equipment, etc.)
- broad definition – statistical and narrow definition plus all businesses which have sport as input (e.g. hotels, etc.)

It is obvious that the Vilnius definition is more suitable for this purpose because of the connection with NACE classification.

We find the importance and advantages of sport satellite accounts as they were summarized in SpEA (2007):

- The sport satellite accounts system is part of the information pyramid formed by the national accounts and therefore comparability and coherence with other economic sectors and indicators is ensured;
- The sport satellite accounts methodology serves as a coordination tool for national and international guidelines for economic data gathering;
- Sport satellite accounts provide key economic indicators for the development of the sport sector such as the gross national sports product, sport income formation in sports, sports productivity;
- Sport satellite accounts allow for economic modeling and forecasting for the sport industry.

Firstly, it is necessary to define indicators of sport satellite accounts which develop the published macroeconomic data mainly for CZ-NACE 93.1 (regarding the classification NACE2). Among other things, it is also a description of the product flows related to sports activities (household consumption, intermediate consumption) through the supply and use tables (CZ-NACE and CZ-CPA classifications). Thus the sport satellite accounts define sport not only for organizations whose main objective is the provision of sports services but also for organizations where sport is a secondary activity (eg. fitness center).

Sport satellite accounts help to specify the economic importance related to sport, monitored the social return on investments in sport facilities and events, describe the flows of sport finance, determine the size and development of the labour market in sport-related industries, etc.

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<sup>2</sup> For more details see Hronová et al. (2009).

<sup>3</sup> European Commission (2007).

### 3. Results

Sport satellite accounts require indicators on gross value added, household consumption (in detailed segmented) and employment. Presented results show the preliminary outcomes for some indicator entering the satellite accounts.

The share of sports in household final consumption is shown in table 1. One can see that the household consumption on sport was oscillating around 1 % during the period between 2004 and 2010 which is less than in Austria where it was 3.6 % in 2004.

**Table 1** Share of household consumption of sport on total consumption, 2004 - 2010

	2004	2005	2006	2007	2008	2009	2010
<b>as % of total consumption</b>	1.25	1.30	1.18	1.04	0.89	1.13	1.11

Source: Czech Statistical Office, authors' computation

Required detail of household consumptions is not usually published, we estimated the share in Table 1 on the basis of acquired details from the Czech Statistical Office. Therefore we can only roughly estimate the development in volume terms. In comparison with 2004, households expenditures on CPA 93 (covers sport and entertainment) declined. The most significant decrease occurred in 2009 when the real expenditures were 12% lower than in 2004.

The most important main sport-related macroeconomic indicators are presented in Table 2. It is shown, that the share of sport on the Czech economy is really low. It is caused by the volunteering and no profitable activities relating to sport in the Czech Republic and also by under-funding of sport.

**Table 2** Gross value added, intermediate consumption, production, compensation of employees in sport, 2010

	<b>sport-related (CZK mil.)</b>	<b>as % of total</b>
gross value added	9,984	0.293
intermediate consumption	16,016	0.271
Production	25,966	0.279
compensation of employees	4,570	0.290

Source: Czech Statistical Office, authors' computation

In case of employees working in sport the ratio amounts to between 0.35 and 0.5% of all employees in the Czech economy. In 2010 there were 25,000 employees in the industry CZ-NACE 93.1, which represent 0.51 % of all employees.

**Table 3** Share of household consumption of sport on gross domestic product, 2004 - 2010

	2004	2005	2006	2007	2008	2009	2010
<b>share in %</b>	0.623	0.634	0.564	0.488	0.428	0.560	0.549

Source: Czech Statistical Office, authors' computation

The table 3 indicates that the share of household consumption on gross domestic product is under the European average.

From the supply and use table one can find out the supply of the sport industry. Naturally the biggest supply is within the sport industry itself. The second industry in terms of the amount of supply is Activities of membership organization and the third one is Real estate activities industry. The share of intermediate consumption of other industries on industry 93 is shown in table 4.

**Table 4** Industries with the highest share of Sports on intermediate consumption, current prices, %, 2010

	<b>intermediate consumption (mil CZK)</b>	<b>share in %</b>
<b>55</b> Accommodation	281	2.28
<b>68</b> Real estate activities	423	3.44
<b>93</b> Sports activities and amusement and recreation activities	8,468	68.78
<b>94</b> Activities of membership organizations	1,427	11.59
<b>96</b> Other personal service activities	783	6.36

Source: Czech Statistical Office, authors' computation

The results show that the highest share of sport on total intermediate consumption was naturally achieved at Sports industry (93). There is huge gap between the first in the share of intermediate consumption and the rest of the industries. This includes spectator sports, health and fitness or sports betting. The second one is industry 94 – Activities of membership organization with the share of 11.59 % and the third one industry 96 – Other personal services activities with 6.36 %.

We tried to estimate an impact of sport expenditures on the Czech Economy by input-output techniques. Since revised data of national accounts are available on the level of CPA 2-digit, we decided to use SIOT for 2007 (based on CPA rev.1). It is based on the most simple model for total economy (import and domestic supply is not available for such detail). The model is following

$$x = (I - A)^{-1} y, \quad (1)$$

where

- $A$  – technical coefficient matrix,
- $x$  – total sources (output + import),
- $y$  – final demand vector.

We can identify the most sport-linked industries<sup>4</sup> by simple model (1). Let assume the increase of household expenditure by CZK 1,000 mil., originally it was CZK 2,906 mil. The following table 5 shows twenty the most influenced commodities (we substitute them for industries) by the change of household consumption. The most influenced commodity is sport where total increase of sources would be CZK 1,316 mil. that is due to sub-deliveries higher than original CZK 1,000 mil. There is identified strong link between business services and sport commodity (CZK 140 mil.). Consumption of electricity and payments to social organisations had similar linkage about CZK 60 mil. The impact on other commodities is significantly lower and it is distributed into remaining 16 commodities, from CZK 38 to 20 mil.

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<sup>4</sup> Even the model is based on commodity by commodity tables.

**Table 5** Impact of households sport expenditures on the Czech Economy, CZK mil.

No	CPA code	CPA Text	Value	No.	CPA code	CPA Text	Value
1	926	Sport activities	1,316	11	741	Legal and tax consult	29
2	748	Business services	140	12	454	Final construction works	25
3	401	Electricity	60	13	244	Medicines	24
4	910	Social organisations	56	14	924	News	23
5	702	Renting	38	15	51A	Wholesale	23
6	232	Fuels	31	16	642	Telecommunications	22
7	703	Real estates	30	17	722	Software services	22
8	55A	Hotels	30	18	652	Other financial interm.	22
9	651	Financial intermed.	30	19	402	Gas	20
10	110	Oil	29	20	15A	Foodstuff	20

Source: authors' computation

#### 4. Conclusion

Currently, there is a trend and tendency towards identifying and to quantifying the impact of certain areas and events on the economy. The impact of sports is one of them. It is important to find out how huge an impact sport events and sports as a whole have to other industries and on the economy. The tool which economists can use are satellite accounts.

This article shows preliminary results of indicators used for the compilation of sport satellite accounts in the Czech Republic. It also brings forward the estimation of impact of sport expenditures on the Czech economy. It shows that an increase of household expenditure by CZK 1,000 mil. brings an increase of expenditures in sport activities by CZK 1,316 mil.

For understanding the impact of sports to the economy it is necessary to carry out a more detailed analysis of industries and products affecting sport. However, this is part of a following research.

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