

**RELATIONSHIP BETWEEN THE COMPETITIVENESS OF  
THE HUNGARIAN ELITE SPORT SYSTEM AND THE  
EFFICIENCY OF ITS FUNDING BY THE HUNGARIAN  
GOVERNMENT**

Abstract of PhD thesis

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## Introduction

In the history of the Summer Olympic Games, Hungary has nearly always found her place among the top ten in the medal tables, but her market share shows a decreasing trend as several nations have started to invest large sums of money in elite sport to achieve improved performance in this area.

The great power map of sport has been significantly rearranged during the last three Olympic cycles. A number of new countries have appeared, and there is a significant increase in the number of nations with medal-winning potential. The differences between countries are decreasing, and the increasing international sporting competition is forcing governments to invest more money in elite sport development just so they can maintain their elite sport success, as the supply of medals remains basically constant.

Having declared sport a strategic sector in 2010, while at the same time assigning significant additional resources to this area, the Hungarian government has brought Hungary into the global sporting arms race phenomenon, as referred to in the international literature (De Bosscher, Bingham, Van Bottengurg, & De Knop, 2008).

Even though elite sport and its success have played an important social and political role in Hungarian society for a long time, there is a lack of literature in the sports economics and management fields regarding a determination of the success of Hungarian elite sport. The research of this dissertation strives to provide a breakthrough regarding this phenomenon and to draw attention to its importance.

This research attempts to explore the critical success factors which allow Hungary to assess how the country can manage her future success in international sporting competitions and what the relationship is between the competitiveness of Hungarian elite sport and the efficiency of the allocation of funding by the Hungarian government to this end.

## Objectives and hypotheses

The main aims of this dissertation were to provide an overall insight into the competitiveness of Hungarian elite sport in terms of what makes the sustaining of success possible in such a strongly developing environment as high-performance sport and an answer as to what conclusions other countries which have similar economic characteristics can draw, as several nations have started to invest large sums of money in elite sport to achieve improved performance in sport. Therefore, I deeply analyse the relationship between the efficiency of governmental sport spending and elite sport success.

The hypotheses of the research were developed on the basis of the identification of problems affecting the competitiveness of Hungarian elite sports and an analysis of the relevant literature.

*H 1: I assumed that the impact of macro factors on international sporting success in individual and team sports was different.*

My assumption is primarily based on the problem experienced in Hungarian sports, as Hungary has a long and successful history in the Summer Olympic Games, though most of its popular team sports are struggling in terms of inefficiencies or declining international competitiveness. In this respect my purpose was to reveal if there are any differences between individual and team sports with regard to the macroeconomic factors compared.

*H 2: I assumed that the positive effect of the socialist political system that had previously been identified and its Olympic-enhancing effect had disappeared by 2016.*

In recent years, more and more of the literature has dealt with identifying the determinants of elite sport success, exploring the relationships between Olympic successes and the characteristics of national elite sport systems (De Bosscher, Bingham, Van Bottenburg, & De Knop, 2008). It is worth noting that in previous studies Hungary appeared as an exception among the examined countries because her victories at the Olympics cannot

be explained with macroeconomic determinants such as population or GDP. In all of the post-Soviet countries, including Hungary, the governments of non-market economies played a large role during the 1960-1992 period (Bernard, 2008). In fact, each Soviet satellite state was able to perform better than the models predicted, but I assumed that this effect is no longer important in determining country medal counts.

*H 3: I assumed that the significant increase in governmental funding after 2010 has had an enhancing effect on international elite sporting success.*

Literature focusing on the identification of the factors determining elite sport achievement showed that the nations have to invest more money in elite sport development just so they can maintain their elite sport success as the supply of medals remains basically constant and there is a diminishing return on investment over time – or in other words, medals have become even more expensive (De Bosscher, Shibli, Westerbeek, & van Bottenburg, 2015; De Bosscher, Bingham, Van Bottenburg, & De Knop, 2008). As a result, competition in international sports has become more intensive, and more nations are adopting strategic approaches to developing world-class athletes. This phenomenon has created a growing demand for the identification of factors leading to international sport success and also for a more in-depth analysis of the effective use of those public resources and sport policy performance.

*H 4: I assumed that the structure and operation of the Hungarian elite sport policy system are similar to those of successful nations.*

The development of my fourth hypothesis is based on the finding in the literature that many nations began to transform their sports policy system based on a model of the former socialist countries; moreover, comparative analyses of elite sport policy systems of different countries clearly point out that the sport policy systems of developed nations show strong homogeneity (De Bosscher, De Knop, & van Bottenburg, 2009; Houlihan, 1997; Houlihan & Green, 2008).



## Methods

The objectives of this research are to identify the factors determining elite sport achievement by comparing and analysing data on sport structures, elite sport policy, the elite sport climate and the international sporting performance of Hungary. Macro- and meso-level analyses were conducted within the framework of this research.

At the start my aim was to capture important features of the economic, political and institutional environments which affect the productivity of sport's performance and growth and, with this, contribute to an understanding of key elements of high-performance sport development. Therefore, I created a macro model in which we divided sport into two groups – individual and team sport – in order to be able to determine if there are any differences at the macro level. The model was built based on the results of the latest studies (Forrest et al., 2015; Andreff-Andreff, 2015; Bernard, 2008), which examine the determinants of a nation's sport performance at the Summer Olympics, but with a different objective. Then, with the application of regression models, I examined whether there was a difference in the effect of each factor on the performance of the two types of groups.

**Table 1. Specifications of macro models**

	<b>Type I</b>	<b>Type II</b>	<b>Type III</b>
<i>Dependent variable</i>	$\text{Ln}(\text{Market Share})_t$	$\text{Ln}(\text{Market Share})_t$	$\text{Ln}(\text{Market Share})_t$
<i>Independent variables</i>			
MODEL1	$\text{Ln}(\text{Market Share})_{t-4}$ $\text{Ln}(\text{Population})_{(t-4)}$ $\text{Ln}(\text{Population})_{(t-4)}$ square $\text{Ln}(\text{GDP per capita})_{(t-4)}$ Host LastHost	$\text{Ln}(\text{Population})_{(t-4)}$ $\text{Ln}(\text{Population})_{(t-4)}$ square $\text{Ln}(\text{GDP per capita})_{(t-4)}$ $\text{Ln}(\text{Athlete share})_t$ Host LastHost	$\text{Ln}(\text{Population})_{(t-4)}$ $\text{Ln}(\text{Population})_{(t-4)}$ square $\text{Ln}(\text{GDP per capita})_{(t-4)}$ Host LastHost
MODEL2	MODEL1 + Political regime Regions Years	MODEL1 + Political regime Regions Years	MODEL1 + Political regime Regions Years
MODEL3	MODEL2 + $\text{Ln}(\text{Youth Market Share})_t$	MODEL2 + $\text{Ln}(\text{Youth Market Share})_t$	MODEL2 + $\text{Ln}(\text{Youth Market Share})_t$

SPLISS I and II, as one of the most significant studies in this field and the basis for the meso-level analysis, contain only well-developed, economically-stable countries with high GDPs. The result of this research can shed new light on the development of winning athletes and an even deeper understanding of the components which determine elite sport success.

In addition to presenting and analysing a number of international scientific papers, the aim of my research was to search for a new method of examining the efficiency of the Hungarian elite sport policy system from an economic point of view. After identifying the weaknesses of the system, I was able to formulate suggestions which could help to maintain the long-term competitiveness of Hungarian elite sport. Due to the economic and management perspective of the analysis, the main purpose of the research was not to analyse individual performance, but to understand the operation models, structures and processes.

The empirical work involved two types of detailed questionnaires. One was developed for professionals, elite coaches and elite athletes, and the other was used for significant data collection regarding the Hungarian government's elite sport funding system, which included financial data for



each sport, participation data and secondary data analysis between 2005 and 2016. The questionnaires are structured in nine parts according to the nine pillars, and each contains about sixty questions. The federations were mainly interviewed in person; in the cases of coaches and athletes, online questionnaires were used. The research focused on the sixteen prioritised and five team sports which follow the new structure of the government's funding scheme. The questionnaire surveys were conducted between March 2015 and March 2016.

During the data analysis, several methods were developed for the most comprehensive exploration of the input-output processes. The methods used were:

- Multiple linear regression analysis, with the aim of examining whether increased state funding had an impact on the effectiveness of sport success;
- The conducting of a cluster analysis for the purpose of exploring the relationship between sport achievement and available government funding;
- Descriptive statistics usage for a processing of the questionnaires; where possible, the domestic results were compared with international ones.



## Results

Overall, we can conclude that GDP, population and the last host/host country effect are stable for any model specification, but the effect of political regime, region and youth market share is uncertain.

The main result of this analysis is that macro factors have a similar effect on international sporting success in the case of both individual and team sports, although we assumed that even some difference between individual and team sports should emerge with regard to macro factors as team sports are mostly highly commercialised and, in that respect, their sport development is quite different from publicly-funded elite sport systems (De Bosscher, Shibli, Westerbeek, & van Bottenburg, 2015). On the other hand, many individual sports are showing explosive growth in terms of the amount of commercial resources flowing into them.

The influence of the economic factors which were included in our models shows a decreasing effect on the market share of nations (De Bosscher, Shibli, Westerbeek, & van Bottenburg, 2015) which means that other factors must also play a significant role in a nation's international sporting success. The responsibility of national sport governance will be increasing in elite sport success in the future, which shows that the efficient utilisation of recourses will become a key factor, along with an appropriate structure, organisation and integrated coordination.

This tells us that in terms of understanding why a huge gap has emerged between successful elite sports and certain popular but underperforming team sports, further, deeper investigations are required.

In the meso-level analysis an important result was that market share cannot be significantly explained by the amount of funding with a one-year delay, or the number of athletes participating in the Heraklesz programmes four years before or the increased amount of funding from 2007 to 2015. This also means that the logic of the Hungarian sport financing system primarily builds on remuneration based on past successes against the investment approach used by successful nations in terms of their allocation decisions in the case of governmental funding. I reject my hypothesis (H3) that the





significant state subsidies provided to Hungarian sport after 2010 have had a positive effect on our international success.

Regarding financial decisions, the characteristics of different sports should be taken into account, and a determination of clear, written expectations for a sport could help increase the efficiency of the funding system. Definitively separating professional and amateur sport in the case of public funding is recommended.

At the same time there are some basic requirements which allow an athlete or a nation to be able to enter a competition, including suitable infrastructure, coaches with strong knowledge about the given discipline, and a basic level of resources which allow athletes and coaches to properly prepare and take part in competitions.

Regarding the result of the correlation analysis indicating that there is no significant relationship between the central youth athlete development system and market share, these programmes could better fit into the new financial system in terms of the sports involved and the number of athletes.

International researches show that those countries with the most integrated approach to elite sport development are the most efficient. What these countries have in common is a strong national coordination of activities, with a clear decision making structure, strong involvement of athletes and coaches in the policy making process, full-time management staff in the national sport associations, and a high level of service-oriented policy towards their national governing bodies/federations/national sport organisations, but with accountability principles, long-term policy planning and political recognition.

The allocation of funding in the Hungarian system, whether it is an annual subsidy to sport federations or even athlete performance rewards, is still to base-based and organisation-centred, that is, it does not strongly take into account the major changes which have taken place over the last fifty years in sport. At the same time, it also disregards the specifications of the different disciplines, which has led to a special selection mechanism over the years.

In Hungary, the use of simple medal-based performance measurement in allocation decisions has misplaced by drifting unduly disadvantaged or



spin-off disciplines where fewer podium positions are available. The market share may be suitable for filtering these distortions with this indicator can always be realized a proportional adjustment.

In recent years the structure of the Hungarian sport financing system has created a disproportion with the introduction of a tax relief system which has affected internal market distortions. I would be highly recommended to handle this phenomenon and it would be a major step forward if elite and professional sports would be much more subdivided in the governmental funding system according to international experience. The latter is an employee by a revenue-generating business, which should be essentially funded by the business sector and the entertainment industry. The author is in agreement with Sárközy (2015) in that it is not the responsibility of public policy in a market economy to fund sport organisations, but to create some sport facilities, support large international sporting events, and to facilitate and subsidise some non-major team sports which are of great importance in terms of Olympic events.

High-performance sport results cannot be achieved in the classical amateur way. Great successes can only be expected from an athlete if they have made it their full-time job and are ensured an adequate income. Effective funding systems developed for athletes and coaches alike are key elements of an effective elite sport system. Based on an evaluation of the questionnaires and the collected data, it can be stated that the level of financial support for athletes and coaches is similar to the international level in elite sports. At the same time, top-performance bonuses are unique and outstanding in Hungary.

Regarding the results of a correlation analysis indicating that there is no significant relationship between the central youth athlete development system and market share, these programmes could better fit into the new financial system in terms of the sports involved and the number of athletes. For such a small country as Hungary, these talent identification systems can be a key factor for our future performance. It can be stated that the structure and operation of the Hungarian elite sport policy system is only similar to the practice of successful nations in some respects, so my fourth hypothesis (H4) is also neglected .

## Conclusions

The main purpose of the research on the competitiveness of Hungarian elite sport was to provide a comprehensive picture of the current state of domestic sports, to explore trends by analysing the environment that may affect the country's future successes and to identify the factors in the Hungarian elite sport policy system which have played a key role in achieving past success and support future elite sport achievements.

In the history of the Summer Olympic Games, Hungary has nearly always found her place among the top ten in the medal tables, but her market share shows a decreasing trend. It should be recognised that the international environment of elite sport has changed significantly in the last decades; more and more nations are developing a strategy for developing world-class athletes and have started to invest large sums of money in elite sport to achieve improved performance in this area. According to research data, over the past decades, the nations leading the Olympic medal tables are almost doubled the amount of money allocated to elite sport, and their sport models are built upon scientifically-based strategies. As a result of increased competition, the differences between countries are declining and the return on investment of elite sport funding is showing a decreasing tendency. Nations will be required to invest even more just to maintain their success, and standing still means, in effect, going backwards because international success increasingly depends on the actions of rival nations as the logic of sport competitions is similar to zero-sum games. Since previous studies showed that one of the most adequate indicators of elite sport success is the amount of available funding, but these additional resources cannot be automatically exchanged for medals. The responsibility of national sport governance will be increasing in elite sport success in the future, which shows that the efficient utilisation of resources will become a key factor, along with an appropriate structure and organisation and integrated coordination.

In the dissertation, I have shown that, regarding financial decisions, the characteristics of different sports should be taken into account and a determination of clear, written funding criteria could help increase the



efficiency of the funding system, together with a stable sport policy system organisational structure. Most successful nations are following very strict and consistent principles regarding allocation criteria in elite sport. Additionally, it would be advisable for Hungary to include sporting features in the allocation criteria so that a distribution of resources would be based on either strategic decisions or another selection mechanism.

It is suggested that the harmonisation of the state-funded talent identification programs in the sport financing system in terms of the sports involved and the number of athletes could also help in terms of a realisation of a more efficient talent identification process.

Sports that meet the elite sport definition in Hungary are primarily funded through the public sector and therefore cannot be characterized by market models. Sport development in commercial team sport is quite different from publicly-funded elite sport systems (De Bosscher et al. 2015, p. 51). It should be highlighted that many sports are showing explosive growth in terms of the amount of commercial resources flowing into them, which will lead to dramatic changes in national elite sport systems. We suggest that separate and sport-specific approaches are needed for an analysis of the competitiveness of commercialised professional sport, especially since national governing bodies mainly have just a regulatory role in the case of professional sport. A definitive separation of professional and amateur sport in the case of public funding is recommended.

Compared with previous domestic practice, it is advised that the performance analysis of the different sports be conducted by an independent body and person who are capable of objectively assessing the performance of sport, since in the case of high-performance sport, every subjective factor softens the system and decreases its efficiency.

In order to maintain the success of Hungarian sport, continuous monitoring of the international environment as well as continuous learning from others through the pursuit of good practice has become essential.

In the field of elite sport, it is those nations who are able to remain competitive in the long term that can shape their sporting policy systems in response to changes in the environment.

The success-enhancing effect of increased resources in Hungarian elite sports could not be identified by the 2016 Olympics; therefore, the development of effective operation forms is one of most important elements. The structure and organisation of the Hungarian elite sport system differs from the internationally-recognised examples in many areas. Based on the research, the adoption of efficiency-enhancing elements is suggested.

This dissertation represents a first attempt at examining the competitiveness of Hungarian elite sport in the context of the efficiency of the allocation of governmental funding. In this respect, this study is able to inform policy makers about the competitive position of Hungary in elite sport. The analysis highlighted the need to improve the efficiency of public funding and the importance of further researches in this area.

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