An Olympic gold medal costs a government $55 million

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This is an illustration showing the cost of an Olympic gold medal. Credit: Carlos III of Madrid University

A government needs to invest an average of 40 million euros ($55 million) in order for the country to obtain the highest Olympic prize. That is how much said feat costs according to the calculations of researchers at the Universidad Carlos III de Madrid, Spain, who are carrying out diverse studies in the area of sport economics.

In order to arrive at this result the researchers calculated the price with a model that measures the number of medals according to government expenditure in sport, along with other variables. "This model allows accurate measurement of how much extra expense is necessary to win

each medal," the UC3M professors Juan de Dios Tena and Ramón J. Flores explained, who carried out this study within the Sports Economics Research Group, headed by professor David Forrest, of the University of Salford (England) and which also includes Ismael Sanz from the Universidad Rey Juan Carlos and Jaime Álvarez from Universidad Complutense of Madrid. "We have estimated the relation between this expenditure and Olympic success once relevant economic, political, and demographic variables are taken into account, such as the size of the country," Tena pointed out. This study was presented at the workshop "The Economic of the Olympic Games" at Groningen in July of 2008, entitled "Can governments buy Olympic medals?" and at present is in the revision process for publication in a research journal.

In the area of Sport Economics these researchers use econometric models (usually regression models) to analyze sports phenomena in which there are economic determinants. The basic general idea is that there are many possible causes for a phenomenon. "A regression model offers an estimate of the individual effect of each of these causes, once the others are controlled for", explained professor Flores, which allows him to draw rigorous conclusions from the statistics models that can thus determine the concrete influence of an element within the context of sport..

The dilemma of sacking a coach

In the case of football teams, for example, this research group has analyzed the figure of the technical trainer and discovered that the effect of sacking a coach during the season is more negative than positive when this situation happens more than once. "Changing coaches reduces by half the number of points obtained in the next eight games for a unit," he remarked. Based on the results obtained during several seasons by the clubs in the Argentinean league, the econometric model that they have developed shows an inverse relation between the number of sackings and

team results. In a nutshell, the more sackings, the worse results in the middle term. "Similar studies carried out in European leagues, where the number of sackings is lower, does not show such an effect, suggesting that abusing the number of sackings can generate negative consequences within this context," concluded these UC3M Statistics Department professors.

Another subject related to the researchers' work is the effect that the 1995 Bosman Law has had on competitivity in the most important football leagues. Before that law, in national competitions there was a very strict limitation governing the number of foreign players which could be signed on by each team, resulting in the available top foreign players usually going to the bigger clubs. With the new legislation eliminating this limitation, the number of players available greatly increased, so that the low and mid level clubs were also able to become stronger and increase their level as well as in tournament play. "In order to measure this increase we use measurements known in the literature, such as the percentage of points over the total obtained by the top two, four or ten teams in the league, as well as taking into account other factors which influence in the modification of the market, such as getting into Champions League and its resulting benefits," they noted The conclusion after the Bosman Law came into effect is that the ratio of points of the top two teams decreased by 2 percent and by 4 percent for the top eight teams.

This type of data and research can serve to orient and aid in the decision-making process. In addition, the answers obtained can be extrapolated to wider contexts. "Our intention is to apply them profusely, and to collaborate in resolving issues which generate debate in society, and which produce interesting conclusions. These matters are rarely studied with the rigor that they deserve," asserted these professors from the UC3M Colmenarejo campus, who have the impression that in this area, work is presented as an "analysis" which scarcely goes beyond mere

opinion. "Due to the media nature of anything related to sport, there are often statistical studies of low quality or which are carried out directly by fans and obtained by unscientific methods from samples which are not at all reliable."

Provided by Carlos III University of Madrid