Impact of Overwhelming Joy on Consumer Demand: The Case of a Soccer World Cup Victory

Jean-Marc FALTER
University of Geneva, Switzerland

Christophe PÉRIGNON
Simon Fraser University, Canada

Olivier VERCRUYSSE
Catholic University of Louvain, Belgium

Abstract:
In this paper, we identify the period following a Soccer World Cup victory as a period of overwhelming joy for the winning country and we test the impact of a World Cup victory on the demand for Soccer in this country. Our empirical study is based on all matches of the French Soccer First League during the four seasons surrounding the 1998 World Cup. After controlling for the main determinants of attendance, we find that consumer demand has positively, significantly, and durably shifted following the 1998 World Cup. We also show that the rise in demand is stronger in the nine cities that hosted the World Cup and that the World Cup effect persists for percentage attendance after we control for season-ticket holders. Finally, we find supportive evidence to our claim that exceptional performance improves sport popularity when analyzing Soccer attendance in several control countries, attendance for a potential substitute for Soccer in France, and other episodes of overwhelming joy.

First Draft: December 7, 2004 – **This Draft**: August 15, 2006

Keywords: Demand for Sports, Externalities

JEL: D12, L83

We thank Philippe Lang, Thomas Morel, and René Vallotton for valuable research assistance and Thomas Gilbert, Roger Guerra, Frédéric Robert-Nicoud, Rohit Tayal, Mathias Thoenig, Hervé Van Oppens, Anatoli Vassiliev, two anonymous referees, the Editor Leo Kahane, seminar participants at Catholic University of Louvain and University of Geneva, and participants at the 2005 Meeting of the Swiss Society of Economics and Statistics, and 2005 SIFF seminars for helpful comments. We are grateful to the French National Soccer League and to Météo France for providing part of the data. Any remaining errors are the authors' responsibility. Emails: falter@ecopo.unige.ch; cperigno@sfu.ca; vercruysse@fin.ucl.ac.be. The corresponding author is Christophe Pérignon, Faculty of Business Administration, Simon Fraser University, 8888 University Drive, Burnaby V5A 1S6, British Columbia, Canada. Phone: (604) 291 3471, Fax: (604) 291 4920.

1. Introduction

Sport supporters are consumers of the output of professional sports. While seriously addicted, fans periodically adjust the portion of their income spent on a given sport into their consumption basket. For instance, Schmidt and Berri (2004) show that Baseball, Football, and Hockey fans have often reacted with disgust to the labor strikes that recurrently plague North American professional team sports leagues. However, they find that attendance is harmed only momentarily and recovers from the effects of those strikes within the next year. Carlton, Frankel, and Landes (2004) show that National Hockey League fans react negatively to any franchise relocation in North America. They report that franchise transfers create a negative league-wide externality as the away attendance of the moving team drops during the four following years.

While academic literature has mainly focused on negative shocks on consumer demand, we investigate in this paper a potential positive shock. We consider a natural experiment based on one of the most important sporting events in the world: the Soccer World Cup.[1] We identify the period following a Soccer World Cup victory as a period of overwhelming joy for the winning country. Then, we test the impact of a World Cup victory on the demand for Soccer in this country. Our empirical study is based on all matches of the French Soccer First League during the four seasons surrounding France's victory in the 1998 Soccer World Cup.

This paper contributes to the literature on the externalities of sports competitions. One stream of research is the effect of performance of sport teams on the mood of their fans (Hirt, Zillman, Erikson and Kennedy, 1992). An interesting result is that current mood affects people's perception of risk. For instance, Arkes, Herren and Isen (1988) find that sales of State of Ohio lottery tickets increase on the day following a Football victory by Ohio State University. Furthermore, medical studies have shown that immense fervor and collective euphoria observed at the time of a victory could decrease mortality due to myocardial infarction. Berthier and Boulay (2003) show that the number of deaths from heart attacks in French men was significantly reduced on the day France won the 1998 Soccer World Cup. As far as economic externalities are concerned, previous studies

[1] The Soccer World Cup is the most important competition in international Soccer and is organized by the Fédération Internationale de Football Association (FIFA). It has taken place every four years since 1930, with only World War II having prevented its organization in 1942 and 1946.

have shown that countries winning the Soccer World Cup added around 0.7% to their economic growth (see Van Leeuwen and Kalshoven, 2006). In a comprehensive empirical study of stock market reaction to the outcome of international Soccer competitions, Edmans, García and Norli (2005) document an economically and statistically significant market decline after losses. Focusing on the performance of England's Soccer team and subsequent changes in the British stock index, Ashton, Gerrard and Hudson (2003) find that good (bad) performance by the national team are followed by positive (negative) market performance. Differently, Boyle and Walter (2003) do not find any relationship between the performance of New Zealand's national Rugby team and stock returns on New Zealand's stock exchange.

The 1998 Soccer World Cup held in France was the most successful sporting event which has ever taken place in this country. Indeed, most of the games attracted huge crowds coming from all over the world and the final between France and Brazil was viewed on TV by one billion people, far exceeding the size of the audience for any other sporting event in the world.[2] Moreover, French fans had the pleasure of seeing their national team win the supreme title.[3] This victory triggered street celebrations throughout the country as millions of people from all social backgrounds, races, and genders gathered to share their joy. However, have these celebrations had any impact on the game's popularity in France? One may wonder whether French people suddenly became Soccer addicts or whether this outburst of passion for Soccer was merely prompted by short-lived chauvinistic feelings.

At first sight, it may not be totally intuitive why the French national team winning the 1998 World Cup should have any impact on the attendances at French League games. Indeed, there is a list of arguments against such a positive spillover effect into attendances: (1) Followers of the national team may have little connection or affiliation with any particular League team - support for League teams could be orthogonal to support for the national team; (2) Any spillover effect could be temporary as fans quickly appreciate that the quality of football at League level is inferior to that

[2] Television coverage at the 2002 World Cup in Korea/Japan reached 213 countries, virtually every country in the world, with cumulative in-home audience of 28.8 billion viewers. During the 2006 World Cup in Germany, several games achieved a market share in excess of 90% in some European countries. By contrast, the highest-rated sports telecast in U.S. history, the 2006 Super Bowl, had a market share of 62%.

[3] The host country has won the Soccer World Cup six times (Uruguay-1930, Italy-1934, England-1966, West Germany-1974, Argentina-1978, and France-1998).

seen in the World Cup; (3) Any effect based on recognition of international stars in the National team will be tempered by the fact that a large number of these actually play outside France. However, in this paper, we argue that hosting and winning the World Cup can produce a huge advertising effect in the hosting/winning country. Furthermore, the organization of the World Cup in France has permitted to several clubs to modernize their facilities. This upgrading process has lead to more comfortable viewing conditions along with a safer environment.[4] Consequently, the World Cup effect may be caused by the three aforementioned influences: a hosting effect, a victory effect, and an infrastructure effect. However, based on this single event, it is virtually impossible to properly disentangle among these three effects.

Early statistical figures seem to indicate that French Soccer did benefit from a "World Cup effect". For instance, the French Soccer Association saw the number of its members grow dramatically right after the 1998 World Cup. Concurrently, French professional Soccer gained in popularity as the average game attendance in the French First League leapt from 16,572 spectators during the 1997/1998 season to 19,809 spectators during the following season. Furthermore, the number of season ticket holders experienced similar growth after the World Cup. In order to test whether this rise in attendance was, for instance, due to a composition effect (i.e., changes in the composition of the league), we use an econometric model allowing us to isolate the World Cup effect.

After controlling for the main determinants of attendance, we find that consumer demand did undergo a positive, significant, and durable shift following the 1998 World Cup. This result holds both in absolute terms, i.e., the number of people who attended a match, and in relative terms, i.e., the percentage of seats that were sold. We also show that the rise in demand was stronger in the nine cities that hosted the World Cup. The World Cup effect persists for percentage attendance after we control for season-ticket holders. Furthermore, we find consistent results when analyzing Soccer attendance in four control countries (England, Germany, Italy, and the Netherlands) and attendance for a potential substitute for Soccer in France (Basketball). Finally, in order to explore the possibility of generalizing our claim that exceptional performance may improve the popularity of a sport, we study all World Cup victories since 1966, as well as three other episodes of

[4] See Siegfried and Zimbalist (2000) for a survey of the economics of sport facilities, and Leadley and Zygmont (2005) for a study on the effect of a new stadium on attendance.

overwhelming joy (the Netherlands in 1988, Italy in 1990, Greece in 2004). We detect a systematic rise in the average attendance experienced by local teams following these important victories, which is consistent with the main result reported for France.

Our conclusions have some implications in light of a dispute between the Fédération Internationale de Football Association (FIFA) and professional clubs. Professional clubs are getting more and more reluctant to release their star players to let them play for national teams. We show that international competitions such as the World Cup serve to promote the game, which indirectly compensates the clubs for loaning their players. In particular, our study permits to quantify the externalities on domestic championships that are triggered by exceptionally good performance by national teams. While our paper focuses on Soccer, the question of the effects of national teams' performance on the popularity of sports is also of primary importance for other sports. For instance, Basketball has exploded in popularity around the globe since the U.S. Basketball "Dream Team" won a gold medal at the 1992 Olympics in Barcelona. There was a financial windfall on a world scale for the National Basketball Association after the 1992 Olympics. More recently, the early eliminations of the U.S. and Canadian Hockey teams from the 2006 Winter Olympics tournament at Torino kept the National Hockey League (NHL) noncommittal about sending professional NHL players to the Olympics beyond 2010. This casual evidence suggests that the effect of the performance of national teams works both ways. Victories in international competitions can trigger tremendous interest in the sport locally and internationally, but on the other hand, defeats can harm the popularity of the game significantly.

The remainder of the paper proceeds as follows. Section 2 describes the data and discusses the methodology, Section 3 presents the empirical results, and Section 4 offers some concluding comments.

2. Data and Econometric Specifications

Our empirical study is based on data on professional Soccer in France. The French Soccer First League is one of the major professional leagues in Europe. As in all European championships, standings are determined according to a total of points accumulated over a season. After each match, points are allocated as follows: three points for a win, one point for a tie, and zero points for

a loss. If two teams have an equal number of points at the end, the goal difference, i.e., the difference between the total number of goals scored and those conceded, is used as a tiebreaker. Unlike professional leagues in the US, the composition of French Soccer leagues changes on an annual basis through a system of promotion and relegation between tiered leagues. At the end of the season, the top two teams in the championship are selected for the European Champions League while the following four or five teams (depending on the ranking of France in the European Soccer index) secure a place in a European Cup. Such organization of the national league allows a large number of teams to play key matches at the end of the season - either to qualify for a European cup, to avoid relegation or, of course, to win the championship.

We specify a standard attendance equation where the dependent variable is the attendance at every match of the French Soccer First League played from the beginning of the 1996/1997 season to the end of the 1999/2000 season.[5] The use of the four seasons surrounding the 1998 World Cup is dictated by the timing of international Soccer. Indeed, we limit both the pre- and post-World Cup periods to two seasons in order to not contaminate our sample with any effects of other major international competitions, such as the European Championships that took place in 1996 (won by Germany, France reaching the semi-finals) and in 2000 (won by France).

According to the burgeoning literature on the demand for sporting events[6], three sets of factors have an impact on the demand for sports: the quality of the opposing teams, uncertainty of the outcome, and some incentive factors (e.g. weather, derby).[7] The quality of the opposing teams is assessed by the standings, the budget, the last results of the two teams, the last result at home of the home team, the fact that the teams are still enrolled in a European Cup or are promoted teams coming from the Second League. Following Forrest, Simmons and Buraimo (2005), we define the outcome uncertainty as the absolute value of the home advantage plus points per game to date of home team minus points per game to date of away team, where home advantage is mean points per game achieved by all home teams in the previous season minus mean points per game achieved by all away teams in the previous season. This measure controls for inherent home advantage. We also

[5] A typical season starts in August and ends in May the following year.
[6] See Peel and Thomas (1992), Simmons (1996), Falter and Pérignon (2000), Czarnitzki and Stadtmann (2002), and Garcia and Rodriguez (2002) for empirical estimations of the demand for Soccer in different European countries.
[7] A detailed description of the variables used in our empirical tests is presented in the Appendix.

account for seasonal variations in attendance using dummy variables: *Summer* (first games), *Autumn*, *Winter*, and *Spring* (last games). The incentive factors concern the weather (*Precipitation* and *Percentage of Sunshine*), the transportation cost between the two cities, the intensity of the rivalry between the two clubs (*Derby*), and the fact that the match is broadcast live on TV. We also account for fixed effects for each home team and each visiting team.

Our dataset contains a total of 1,298 matches and covers four seasons around the 1998 World Cup. Thus, we can consider the 1998 World Cup as a potential relevant event and apply a standard event-study methodology. We introduce a dummy variable for the pre- (*1996/1997* and *1997/1998*) and post-event seasons (*1998/1999* and *1999/2000*). The sign and the magnitude of the estimated coefficients related to the post-World Cup seasons permit to assess whether the French success in the 1998 World Cup had a positive and significant impact on the demand for Soccer in France. In order to test whether the World Cup effect is stronger in cities that have hosted matches during the 1998 World Cup, we interact the post-World Cup dummy variable with a variable equal to one if a given match takes place in hosting city (*Host City*).

Our dataset presents several innovative features. For instance, the quality of the teams is measured by their budget, which is a key club-specific financial indicator. This variable appears particularly appealing since it measures the total amount of expenses – without considering player transfers – and then is directly linked to the salaries of the players, which should proxy their productivity. Furthermore, we use transportation costs instead of the distance between the two rival cities. Transportation costs are estimated using the price of a round-trip second-class train ticket between the two cities. This measure explicitly takes into account the non-linearity of transportation costs that is mainly due to the hilly relief of France. We also include weather data in our attendance model. Instead of using dichotomous weather data (rain vs. no rain), we use daily continuous variables, i.e., cumulative precipitation and hours of sunshine recorded at the weather station closest from each team's field.[8]

[8] Interestingly, the expected impact of weather conditions on attendance is ambiguous. On the one hand, inclement weather diminishes the quality of the viewing environment and, potentially, the quality of the game. On the other hand, pleasant conditions also expand the set of alternative entertainment activities that compete with the match for the supporters' leisure time.

We present some descriptive statistics in Table 1. We clearly see that both the attendance and percentage attendance have risen between 1996 and 2000. At the club level, we note some significant differences in terms of average attendance (between 4,856 and 38,999 people), percentage attendance (between 27.8% and 89.0%), number of season ticket holders (between 655 and 26,484 people), and financial resources (annual budgets ranging between 51 and 332 million of French Francs). Out of the 27 clubs, 14 had been playing continuously in the French Soccer First League during our sample period (140 matches), with the others playing over one, two, or three seasons only. We also note that nine French cities hosted some World Cup matches in 1998.

< Insert Table 1 >

The equation explaining attendance is:

$$Log\ Attendance_i = \alpha + \beta_Q \cdot Q_i + \beta_U \cdot U_i + \beta_I \cdot I_i + \beta_{WC} \cdot WC_i + \beta_H \cdot H_i + \beta_T \cdot T_i + \varepsilon_i \qquad (1)$$

where $Log\ Attendance_i$ is the logarithm of the total attendance of match i, Q_i the set of variables measuring the quality of the opposing teams, U_i the variable assessing the outcome uncertainty, I_i the set of variables describing the incentives to the supporters, WC_i the dummies for the post-World Cup seasons, and H_i the hosting city dummy, T_i the team dummies (fixed effects). The latter are computed for both away and home teams. Indeed, some visiting teams attract large crowds regardless of their current performances because of their prestige.[9] We estimate the model in Equation (1) by means of Ordinary Least Square and Tobit model (Greene, 2003, pp. 764-780). Indeed, the number of tickets sold is right-censored by the capacity of the stadium.[10] The problem of right censoring might be acute in our case as the capacity of some games venues was momentarily reduced during the years prior to the World Cup as stadiums underwent renovations.

Furthermore, we estimate an alternative attendance model where the explained variable in Equation (1) is the percentage attendance of match i. This variable is obtained by dividing the total

[9] This is typically the case of Marseille or Saint-Etienne who performed well in European cups in the past and since then have remained highly popular.

[10] In our sample, 9% of the games were sold out. We consider a game to be sold out when the attendance is equal to or larger than 95% of the stadium capacity. The right-censored observations are mainly concentrated among a few teams (e.g. Marseille).

attendance by the maximum capacity of each stadium. Using this alternative specification, we are able to test whether the World Cup did affect the demand for Soccer also in relative terms. This specification allows us to control more effectively for the capacity constraint facing each club. More importantly, it constitutes a useful check of the robustness of our results since any temporary reduced capacity prior to the World Cup would bias the results against finding a World Cup effect.

Before presenting the estimation results, some additional comments have to be made about our attendance model. Firstly, the admission price has not been introduced into the model. This omission is due to the fact that no data are available on the number of tickets sold in each price range for each match. In this case, researchers have to rely on average ticket prices which are obtained by dividing total gate receipts by the total attendance. However, Falter and Pérignon (2000) report that both the average ticket prices and cheapest ticket prices are *positively* correlated with total attendance in the French Soccer First League, which suggests a reverse causality between prices and attendance. The reason is that clubs often behave as local monopolies and modify admission prices according to the expected attendance.[11] In our attendance model, we indirectly capture variations in ticket prices among teams through the team dummy variables. Moreover, as ticket prices generally increased over our sample period, there is no way one can explain any boost in attendance following the World Cup by a drop in admission prices.

Secondly, our dataset does not allow us to control directly for the quality of the players. Indeed, a World Cup effect could be due to a sudden influx of quality players into the French championship. This is definitely not the case here as the French First League lost most of its superstar players over our sample period. This phenomenon has been caused to a large extent by the new transfer fee regulation in Europe (Feess and Muehlheusser, 2003 and Fees, Frick, and Muehlheusser, 2004). The exodus of the most talented French players towards foreign leagues was initiated around 1996. For instance, at the 1996 European championship, about 75 percent of the players of the French national team were playing in France, while this proportion fell to 50 percent during the 1998 World Cup, and to one third in 2000. Another manifestation of the decline in the quality of the

[11] The fact that average ticket prices are positively correlated with attendance is not only due to price manipulations. When attendance is particularly high, additional supporters need to purchase more expensive tickets which tends to increase the average ticket price.

French championship is the poor performance of French teams in international club competitions after the 1998 World Cup.

3. Empirical Analysis

3.1. Main Results

We report the OLS coefficient estimates and the associated p-values for the attendance model in Tables 2 and 3. We successively use the total attendance (Table 2) and the percentage attendance (Table 3) as the explained variable in Equation (1). The estimates associated with the dummy variables for the seasons following the 1998 World Cup are always positive and statistically significant. The World Cup effect is detected using both total attendance and percentage attendance. Furthermore, our conclusion holds regardless of the dummy variables used to capture the World Cup effect, i.e., either one variable (*1998/2000*), or two separate variables for the two post-World Cup seasons (*1998/1999* and *1999/2000).* Interestingly, we note that the coefficient attached to the 1999/2000 season variable is significantly higher than the one attached to the 1998/1999 season.[12] This result seems to indicate that the demand shift following the 1998 World Cup has been persistent. It also shows that the World Cup effect is not a spurious effect caused by stadium improvement programs since during the 1998/1999 season all stadiums were already at their full capacity. In an additional specification, we test whether the rise in attendance anticipated the 1998 World Cup. In this case, the coefficient estimate associated with the season preceding the event (*1997/1998*) systematically fails to be statistically significant. One should bear in mind that average attendance did increase between the 1996/1997 season and the 1997/1998 season (see Table 1). However, our results seem to indicate that this increase in attendance was mainly due to composition effects. In each regression, we add a dummy variable equal to one if the home team is located in a city that hosted the World Cup in 1998. In each specification, the coefficient attached to this variable is positive and statistically significant. This means that the World Cup effect has been stronger in cities that hosted the event, which points to some advertisement or new stadium

[12] The p-value associated with the test for the equality of the two coefficients is 0.000. Similar growing momentum is found in other countries following World Cup victories (See Section 3.4).

effect.[13] This also means that the World Cup effect is not explained only by new infrastructure as the host city dummy controls for this effect.

< Insert Tables 2 and 3 >

As a robustness check, we also estimate our attendance models using two alternative econometric methods. First, we use a TOBIT model in order to account for the fact that some of the games are sold out, i.e., the independent variable is right censored. Second, we apply the Prais-Winsten procedure for handling first-order serial correlation, i.e., the residual in Equation (1) for home game *t* may be correlated with the residual for home game t-1. We present in Table 4 the coefficient estimates and the p-value for the year dummies only. We see that these alternative econometric approaches also identify a positive and significant World Cup effect.

< Insert Table 4 >

While the present paper does not aim to identify the main determinants of the demand for Soccer, it is still worth commenting on the results obtained on the control variables. In Table 2, we report a strong positive correlation between the budget of the home team and attendance. On the other hand, the budget of the visiting team does not have a systematic impact on attendance. Not surprisingly, top-ranked teams generally attract greater crowds – this being valid as well for the home and away teams (Standings variables) – and recent successes also seem to boost attendance (Last Score and Last Score at Home). The impact of outcome uncertainty on attendance is captured in two manners. First, the match-specific measure of uncertainty does not explain a significant part of Soccer attendance. This is in line with other studies of European soccer leagues and North American sports leagues (see Borland and Macdonald, 2003). Second, the season dummies (*Summer*, *Autumn* and *Winter*) show that the stage of the competition is an important factor shaping the demand for Soccer as the more important games take place at the end of the season, i.e., in spring, which is the reference period. As a result, it seems that global uncertainty is more relevant than match-specific uncertainty. In the meantime, Soccer fans seem to respond strongly to other incentives. We find

[13] From our data, it is difficult to disentangle advertisement effects from new stadiums effects as most of the new stadiums were built in cities that hosted the World Cup during the period under investigation. Substituting the "Host City" dummy variable by a "New Stadium" dummy variable does not alter the results.

that transportation costs are negatively related to attendance, and that local or historical rivalries draw unexpectedly large crowds (*Derby*). Moreover, the weather seems to have some influence on attendance as sunny days are positively correlated with big crowds. Thus, sport consumers increase their demand for football when experiencing more pleasant weather instead of pursuing alternative entertainment activities. On the other hand, live TV broadcasting does not seem to be a relevant determinant of the attendance when all the main influences are properly accounted for.[14] Finally, as expected by any Soccer connoisseur, the largest team effect is attached to Marseille (not reported). This is just as valid for Marseille's home games as for road games. When the percentage attendance is used in place of the total attendance, our conclusions remain broadly unchanged (see Table 3).

3.2. Controlling for Season Ticket Holders

To refine the analysis, we differentiate between total attendance and floating attendance. The floating attendance is defined as the number of spectators attending a given match minus the number of season ticket holders. The purpose of this estimation is to test whether the World Cup effect was caused by a rise in the number of hard core fans or in the number of occasional spectators. To perform this task, we change the explained variable in the attendance model:

$$Floating\ Attendance_i = \alpha + \beta_Q \cdot Q_i + \beta_U \cdot U_i + \beta_I \cdot I_i + \beta_{WC} \cdot WC_i + \beta_H \cdot H_i + \beta_T \cdot T_i + \varepsilon_i. \qquad (2)$$

Regression results are reported in Table 5. We see that the World Cup effect fails to be statistically different from zero for floating attendance. The lack of significance of the floating attendance coefficient might be a by-product of the positive coefficients reported in Table 2 and 3. Indeed, an increase in the number of season ticket holders mechanically diminishes the supply of seats available for occasional fans. Thus, the floating attendance variable may be a poor instrument to capture the sensitivity of the demand for football of occasional spectators. On the other hand, the percentage floating attendance variable takes into account the above mentioned problem. With the latter variable, the World Cup effect is positive and statistically significant. Overall, our results seem to indicate that the World Cup also had an impact on the number of occasional supporters. The other coefficient estimates are rather consistent with those obtained from non-adjusted attendances in Tables 2 and 3. As expected, the effects of some factors are magnified when season

[14] The insignificant TV effect might be explained by the fact that matches are broadcast on a pay-TV channel.

ticket holders are excluded from the analysis. This is especially true with respect to quality and incentive variables such as *European Cup* (home), *Percentage of Sunshine*, and *Derby*. The former coefficient suggests the existence of a substitution effect between European cup games and domestic games. Indeed, additional games may push the Soccer fan to the limit of his/her budget constraint. Moreover, domestic games may look somewhat unattractive to local fans when they have the opportunity to watch some of the continent's most famous teams.

< Insert Table 5 >

3.3. World Cup Effects in Other Countries and on a Potential Substitute for Soccer

We now investigate whether the identified rise in the demand for professional Soccer in France is an isolated evolution or whether it is caused by an overall gain in popularity for professional sports. We consider the demand for professional Soccer in four control countries, i.e., England, Germany, Italy, and the Netherlands. We also analyze the demand for professional Basketball in France which can be seen as a potential substitute for Soccer.[15] In Figure 1, we see that the significant rise in attendance witnessed in France after the 1998 World Cup (+19.5%) is not observed in other major championships (+4.6% in England, -3.2% in Germany, -1.0% in Italy, and +5.8% in the Netherlands). In the lower right plot of Figure 1, we present the evolution of average annual attendance in Basketball between 1994 and 2003 in France. Interestingly, we see that Basketball average attendance has been rather stable over our sample period and momentarily dropped right after 1998.

< Insert Figure 1 >

3.4. Other Periods of Overwhelming Joy

In order to test whether our conclusion on the positive effect of exceptional sport performance on sports in the winning country is robust to other events, we consider several other episodes of overwhelming joy. Firstly, we consider all the countries that have won the Soccer World Cup since 1966.[16] For each country, we compute in Table 6 the percentage changes in average annual attendance in professional Soccer using a pre- and a post-victory period of one, two, and three

[15] Another potential substitute would be Rugby but we did not find any attendance data prior to 1998.
[16] We were not able to find historical attendance data before 1966, nor did we find any data on attendance in Brazil and Argentina.

years, respectively. For instance, the average attendance in England during the one-year period after the 1966 victory is 14.39% larger than the average attendance in England during the one-year period prior to the 1966 victory. Two stylized facts appear to be valid in all winning countries: (1) average attendance tends to increase after the victory, and (2) the high level of attendance lasts for several years after the victory.

< Insert Table 6 >

Secondly, we consider three other distinct episodes. The first episode occurred in the Netherlands in 1988. In this particular year, the Netherlands won the European Soccer Championship hosted in Germany and a Dutch team, PSV Eindhoven, won the major European club competition, i.e., the European Champions Cup, currently called the Champions League. We claim that this historical double-victory can be considered as another period of overwhelming joy since it is the first and only time since the creation of European Soccer competitions – in 1956 for clubs and in 1960 for countries – that a country came first in both tournaments.[17] The second episode occurred in Italy in 1990, when three Italian teams won the three European club competitions, i.e., European Champions Cup (AC Milan), UEFA Cup Winners' Cup (Sampdoria), and UEFA Cup (Juventus). This grand slam was unprecedented and has never been achieved by any other country between 1956 and 2006, at the time this paper is being written. The third episode is the victory of the Greek national team in the 2004 European Soccer Championship. Greece arrived in Portugal for Euro 2004 as 150-1 outsiders who had never won a match at a major tournament.

We plot in Figure 2 the evolution of the average attendance per year in the Netherlands, Italy, and Greece starting six years before their respective victory and ending (when possible) six years after the victory. The rise in attendance experienced by domestic teams following these historical successes is striking. While an in-depth analysis of the Dutch, Italian, and Greek attendances would be required to formally test whether the increase in average attendance is due to the victory or to

[17] In South America, Brazil also won both the continental club competition and the South American Cup of Nations (Copa América) in the same year, in 1997 and 1999, as did Uruguay in 1987. However, those events may not be qualified as exceptional events for these two countries. Indeed, Brazil won six (out of eight) continental club competitions between 1992 and 1999, while Uruguay had already won the previous Copa América in 1983.

other factors, this additional evidence is consistent with our argument that exceptional performance improves sport popularity.

< Insert Figure 2 >

3.5. Implications for the Conflict Between Professional Soccer Clubs and FIFA

Our conclusions have some implications for the passionate debate currently raging between various professional Soccer clubs and FIFA. Indeed, as pointed out by Szymanski (2003), international competitions involving national sides can be considered as a tax levied on clubs, as the latter have to release their best players without any financial compensation. This problem is particularly acute for the wealthiest clubs since virtually all of their players take part in international competitions.

The burden of releasing players for international competitions is not only born during events like the World Cup or the European Championship, but also for the qualifying rounds that take place during the regular season. Moreover, as Soccer labor markets become more integrated, French clubs hire international players coming from all around the world. Thus, a number of players from foreign national squads play in the French championship and also have to be released fairly often. This system is currently under strain as professional Soccer clubs are getting more and more reluctant to release their star players. For instance, the G-14 group – a European economic interest group consisting of 18 professional clubs from Europe – has filed a complaint with the Swiss Competition Commission regarding the problems caused by the non-compensated release of club players in favor of national teams.[18]

We show in this paper that, in compensation, international competitions such as the World Cup lead to increased interest in Soccer. In particular, we quantify the externality on domestic championships that is triggered by national team's performance. However, one should be careful in generalizing this conclusion to other countries, periods or sports since the event study conducted in this paper deals with an exceptionally positive sporting event.

[18] The case has been filed in Switzerland because FIFA headquarter is located in Zurich, Switzerland. The G-14 group has demanded $1.1 billion in costs for releasing players for national team duty over the past 10 years.

4. Conclusion

“The day of glory has arrived" goes France’s national anthem. And indeed it had on July 12, 1998, the day France won the Soccer World Cup. This historic victory sparked nationwide scenes of euphoria, with an estimated one million revelers thronging the Champs Elysées in Paris – celebrations unseen since the end of World War II. In this paper, we show that this episode of overwhelming joy did have a structural impact on the demand for Soccer in France.

Using a unique database containing all matches of the French Soccer First League during the four seasons surrounding the 1998 World Cup, we find that consumer demand has positively, significantly, and durably shifted following France’s victory. While we find some infrastructure or advertisement effect, these factors fail to explain the World Cup effect. We also show evidence that the World Cup effect persists for percentage attendance after controlling for season-ticket holders. We find supportive evidence to our claim that exceptional performance may improve sport popularity when analyzing Soccer attendance in several control countries (England, Germany, Italy, and the Netherlands) and attendance for a potential substitute for Soccer in France (Basketball). Indeed, none of the control countries did experience similar rises in Soccer attendance and Basketball in France suffered from a loss in interest right after the 1998 World Cup. Finally, we study several other episodes of overwhelming joy that occurred in the Netherlands, Italy, and Greece. Consistent with our results obtained for France, we show that these events have been systematically followed by a positive and durable shift in the demand for Soccer in these countries. Our conclusions have some implications in light of the dispute that pits professional clubs against FIFA. While clubs are getting more and more reluctant to release their star players in favor of national teams, we show that international competitions can in some situations promote the game, thus serving to indirectly benefit the clubs as well.

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Table 1: Descriptive Statistics

Panel A: Average Attendance Figures

	1996-2000	1996/1997	1997/1998	1998/19991	1999/2000
Average Attendance	18'015	14'625	16'572	19'809	22'322
Average Percentage Attendance	0.6353	0.5638	0.6010	0.6629	0.7306

Panel B: Descriptive Statistics by Club

Club	Average Attendance	Average % Attendance	Season Tickets	# Home Matches	Average Budget	World Cup Host
Auxerre	10,900	0.4655	3,238	70	118	-
Bastia	5,832	0.5796	1,945	70	80	-
Bordeaux	24,170	0.6932	9,225	70	209	Yes
Caen	15,893	0.7544	8,044	19	63	-
Cannes	4,856	0.4007	771	36	87	-
Chateauroux	12,274	0.7134	4,091	17	55	-
Guinguamp	10,931	0.6077	4,792	36	69	-
Le Havre	11,450	0.6337	4,526	70	89	-
Lens	31,482	0.7663	15,948	70	196	Yes
Lille	10,346	0.6525	2,166	19	68	-
Lorient	11,168	0.7989	5,657	17	63	-
Lyon	27,195	0.7394	13,038	70	206	Yes
Marseille	36,357	0.8441	26,484	70	275	Yes
Metz	17,042	0.6798	6,205	70	105	-
Monaco	7,971	0.4555	755	70	275	-
Montpellier	12,859	0.4222	4,511	70	85	Yes
Nancy	10,203	0.5044	3,104	53	57	-
Nantes	25,097	0.6502	9,800	70	164	Yes
Nice	5,024	0.2783	655	19	51	-
Paris S.G.*	38,999	0.8719	16,092	70	332	Yes
Rennes	13,805	0.7610	3,943	70	102	-
Saint-Etienne	27,994	0.7898	9,375	17	180	Yes
Sedan	12,953	0.7621	5,150	17	100	-
Sochaux	7,747	0.8895	4,019	17	94	-
Strasbourg	17,977	0.5000	4,422	70	139	-
Toulouse	15,716	0.4321	3,994	34	77	Yes
Troyes	14,139	0.7800	7,110	17	100	-

Notes: Panel A presents descriptive statistics for the average total and percentage attendance for the whole sample period (1996-2000) and for each of the four considered seasons. The percentage attendance is defined as the ratio of the total attendance and the maximum capacity of each stadium. Panel B displays some club-specific figures which are computed over the whole sample period: the average total attendance, the average percentage attendance, the average number of season ticket holders, the number of home matches, the average budget in millions of French Francs, and whether the club's stadium has hosted some World Cup games in 1998. See the Appendix for a detailed description of the variables. * Paris S.G. stands for Paris Saint-Germain.

Table 2: Regression Results for the Attendance Model

Variables	Estimates	(p-values)	Estimates	(p-values)	Estimates	(p-values)
World Cup Effect						
1997/1998	-		-		0.008	(0.837)
1998/1999	-		0.137	(0.000)	0.139	(0.000)
1999/2000	-		0.233	(0.000)	0.234	(0.000)
1998/2000	0.180	(0.000)	-		-	
Control Variables						
Host City	0.111	(0.008)	0.116	(0.005)	0.118	(0.004)
Standings (home)	-0.009	(0.000)	-0.009	(0.000)	-0.009	(0.000)
Standings (away)	-0.007	(0.007)	-0.007	(0.004)	-0.007	(0.004)
Budget (home)	0.001	(0.005)	0.001	(0.006)	0.001	(0.031)
Budget (away)	0.000	(0.728)	0.000	(0.632)	0.000	(0.647)
Last Score (home)	0.049	(0.002)	0.048	(0.002)	0.048	(0.002)
Last Score (away)	0.000	(0.971)	-0.001	(0.883)	-0.001	(0.883)
Last Score at Home (home)	0.007	(0.676)	0.005	(0.729)	0.005	(0.730)
European Cup (home)	-0.004	(0.902)	-0.011	(0.718)	-0.010	(0.731)
European Cup (away)	0.033	(0.075)	0.029	(0.091)	0.030	(0.086)
New Team (home)	-0.099	(0.352)	-0.084	(0.473)	-0.085	(0.461)
New Team (away)	0.017	(0.658)	0.032	(0.405)	0.031	(0.395)
Outcome Uncertainty	0.013	(0.396)	0.015	(0.338)	0.015	(0.338)
Summer	-0.067	(0.020)	-0.070	(0.029)	-0.070	(0.029)
Autumn	-0.198	(0.000)	-0.196	(0.000)	-0.196	(0.000)
Winter	-0.151	(0.000)	-0.153	(0.000)	-0.153	(0.000)
Precipitation	0.315	(0.638)	0.253	(0.728)	0.247	(0.734)
Percentage of Sunshine	0.049	(0.020)	0.048	(0.018)	0.047	(0.018)
Transportation Cost	-0.138	(0.003)	-0.137	(0.003)	-0.137	(0.003)
Derby	0.126	(0.013)	0.127	(0.012)	0.127	(0.012)
TV	0.002	(0.966)	-0.000	(0.994)	-0.000	(0.981)
Constant	9.585	(0.000)	9.586	(0.000)	9.592	(0.000)
Home Team Fixed Effects	Yes		Yes		Yes	
Away Team Fixed Effects	Yes		Yes		Yes	
Adjusted R^2	0.5612		0.5698		0.5698	

Notes: This table reports the OLS parameter estimates, p-values (in parentheses), and adjusted R square for the attendance model presented in Equation (1). The dependent variable is log attendance. The p-values are computed from robust standard errors corrected for heteroscedasticity (Huber-White) and intra-group correlation (same team observations).

Table 3: Regression Results for the Percentage Attendance Model

Variables	Estimates	(p-values)	Estimates	(p-values)	Estimates	(p-values)
World Cup Effect						
1997/1998	-		-		0.016	(0.617)
1998/1999	-		0.049	(0.009)	0.053	(0.000)
1999/2000	-		0.121	(0.000)	0.124	(0.000)
1998/2000	0.082	(0.000)	-		-	
Control Variables						
Host City	0.023	(0.545)	0.027	(0.489)	0.031	(0.484)
Standings (home)	-0.003	(0.021)	-0.004	(0.017)	-0.004	(0.020)
Standings (away)	-0.004	(0.003)	-0.005	(0.001)	-0.005	(0.001)
Budget (home)	0.000	(0.203)	0.000	(0.189)	0.000	(0.419)
Budget (away)	0.000	(0.996)	0.000	(0.887)	0.000	(0.709)
Last Score (home)	0.031	(0.001)	0.031	(0.001)	0.031	(0.001)
Last Score (away)	-0.009	(0.151)	-0.011	(0.087)	-0.011	(0.091)
Last Score at Home (home)	0.018	(0.026)	0.017	(0.033)	0.017	(0.035)
European Cup (home)	-0.016	(0.345)	-0.021	(0.159)	-0.020	(0.165)
European Cup (away)	0.013	(0.164)	0.010	(0.279)	0.012	(0.124)
New Team (home)	0.017	(0.704)	0.028	(0.606)	0.025	(0.655)
New Team (away)	0.000	(0.981)	0.012	(0.582)	0.009	(0.652)
Outcome Uncertainty	-0.002	(0.824)	-0.001	(0.921)	-0.001	(0.919)
Summer	-0.044	(0.012)	-0.047	(0.009)	-0.047	(0.009)
Autumn	-0.108	(0.000)	-0.107	(0.000)	-0.108	(0.000)
Winter	-0.087	(0.000)	-0.088	(0.000)	-0.089	(0.000)
Precipitation	0.050	(0.887)	0.003	(0.994)	-0.008	(0.994)
Percentage of Sunshine	0.036	(0.004)	0.035	(0.004)	0.034	(0.003)
Transportation Cost	-0.071	(0.011)	-0.070	(0.011)	-0.070	(0.010)
Derby	0.069	(0.012)	0.069	(0.011)	0.069	(0.011)
TV	0.005	(0.735)	0.004	(0.793)	0.003	(0.851)
Constant	0.672	(0.000)	0.673	(0.000)	0.031	(0.484)
Home Team Fixed Effects	Yes		Yes		Yes	
Away Team Fixed Effects	Yes		Yes		Yes	
Adjusted R^2	0.5164		0.5330		0.5355	

Notes: This table reports the OLS parameter estimates, p-values (in parentheses), and adjusted R square for the attendance model presented in Equation (1). The dependent variable is attendance as a percentage of stadium capacity. The p-values are computed from robust standard errors corrected for heteroscedasticity (Huber-White) and intra-group correlation (same team observations).

Table 4: Robustness Checks: Right-Censored Data (TOBIT) and First-Order Serial Correlation (Prais-Winsten)

Variables	Estimates (p-values)	Estimates (p-values)	Estimates (p-values)
Panel A: TOBIT – Attendance			
1997/1998	-	-	0.010 (0.720)
1998/1999	-	0.136 (0.000)	0.139 (0.000)
1999/2000	-	0.250 (0.000)	0.252 (0.000)
1998/2000	0.187 (0.000)	-	-
Panel B: TOBIT – Percentage Attendance			
1997/1998	-	-	0.014 (0.289)
1998/1999	-	0.049 (0.000)	0.053 (0.000)
1999/2000	-	0.127 (0.000)	0.129 (0.000)
1998/2000	0.084 (0.000)	-	-
Panel C: Prais-Winsten – Attendance			
1997/1998	-	-	0.012 (0.769)
1998/1999	-	0.129 (0.000)	0.132 (0.000)
1999/2000	-	0.222 (0.000)	0.224 (0.000)
1998/2000	0.171 (0.000)	-	-
Panel D: Prais-Winsten – Percentage Attendance			
1997/1998	-	-	0.018 (0.594)
1998/1999	-	0.045 (0.012)	0.049 (0.002)
1999/2000	-	0.114 (0.069)	0.118 (0.000)
1998/2000	0.076 (0.000)	-	-

Notes: Panels A and B present the TOBIT parameter estimates and p-values (in parentheses) for the attendance model presented in Equation (1). Panels C and D present the Prais-Winsten parameter estimates and p-values (in parentheses) for the attendance model presented in Equation (1). The explained variable in Panels A and C is the logarithm of the total attendance of every match. The explained variable in Panels B and D is the percentage total attendance of every match, which is obtained by dividing the attendance by the maximum capacity of each stadium. Parameter estimates on other control variables in Equation (1) are not reported.

Table 5: Robustness Checks: Controlling for Season Ticket Holders

	Floating Attendance		Percentage Floating Attendance	
Variables	**Estimates**	**(p-values)**	**Estimates**	**(p-values)**
World Cup Effect				
1998/2000	0.041	(0.523)	0.068	(0.011)
Control Variables				
Host City	0.115	(0.209)	0.048	(0.226)
Standings (home)	-0.019	(0.002)	-0.006	(0.001)
Standings (away)	-0.009	(0.058)	-0.005	(0.001)
Budget (home)	-0.001	(0.274)	0.000	(0.437)
Budget (away)	0.001	(0.138)	0.000	(0.592)
Last Score (home)	0.036	(0.259)	0.035	(0.003)
Last Score (away)	0.013	(0.682)	-0.013	(0.137)
Last Score at Home (home)	0.011	(0.682)	0.025	(0.007)
European Cup (home)	-0.135	(0.036)	-0.048	(0.064)
European Cup (away)	0.023	(0.337)	0.012	(0.230)
New Team (home)	0.136	(0.398)	0.062	(0.203)
New Team (away)	-0.007	(0.957)	0.017	(0.431)
Outcome Uncertainty	0.013	(0.649)	-0.002	(0.847)
Summer	-0.079	(0.194)	-0.061	(0.008)
Autumn	-0.241	(0.000)	-0.137	(0.000)
Winter	-0.185	(0.002)	-0.114	(0.000)
Precipitation	0.677	(0.507)	-0.311	(0.635)
Percentage of Sunshine	0.113	(0.015)	0.049	(0.003)
Transportation Cost	-0.199	(0.012)	-0.080	(0.017)
Derby	0.246	(0.000)	0.102	(0.001)
TV	0.041	(0.423)	0.021	(0.311)
Constant	9.522	(0.000)	0.647	(0.000)
Home Team Fixed Effects	Yes		Yes	
Away Team Fixed Effects	Yes		Yes	
Adjusted R^2	0.3679		0.5285	

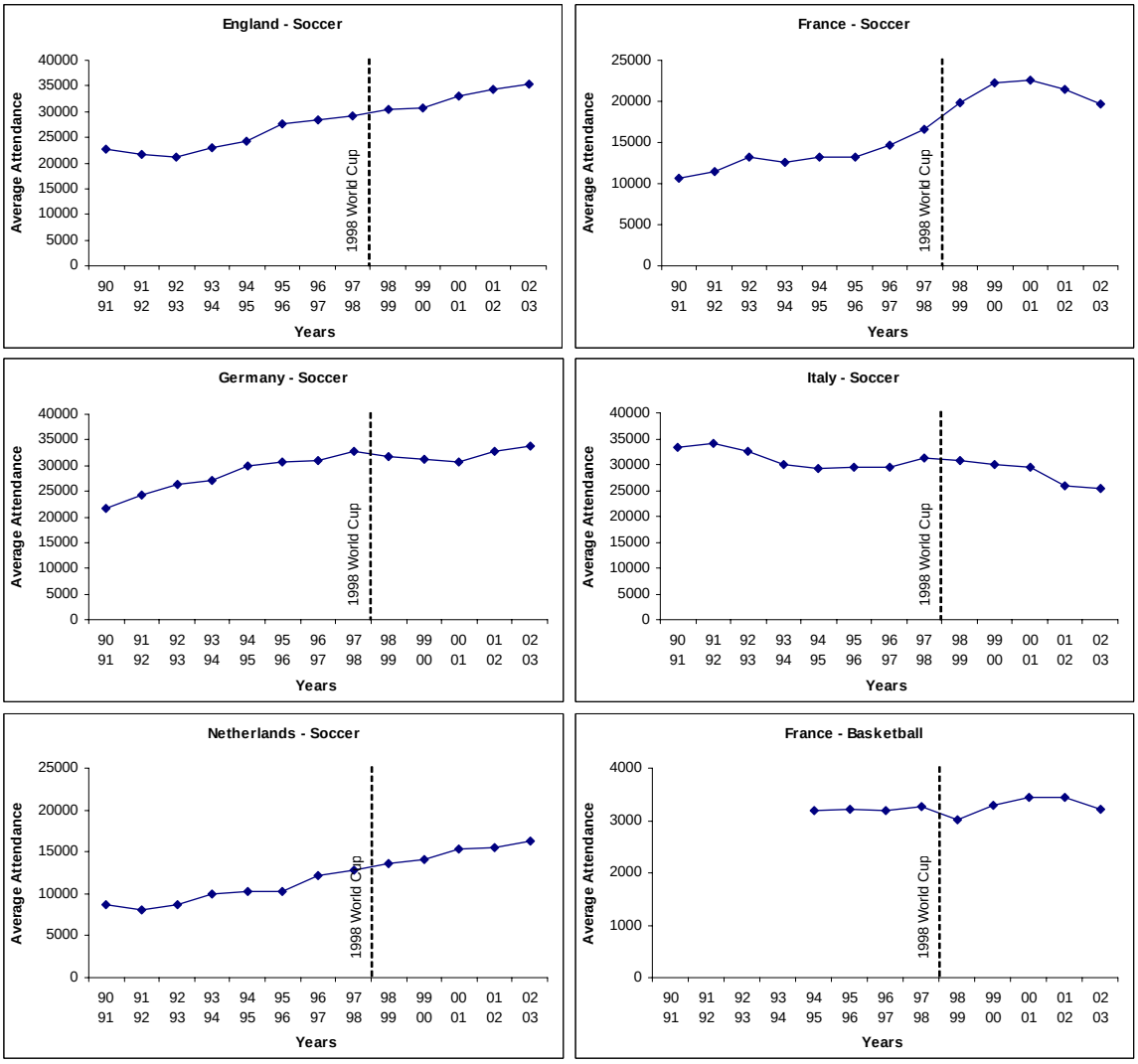
Notes: This table reports the OLS parameter estimates, p-values (in parentheses), and adjusted R square for the attendance model presented in Equation (2). The explained variables are the logarithm of the floating attendance, which is obtained by subtracting the number of season ticket holders from the total attendance, and the percentage floating attendance, which is obtained by dividing the adjusted attendance by the difference between the maximum capacity of the stadium and the number of season ticket holders. The p-values are computed from robust standard errors corrected for heteroscedasticity (Huber-White) and intra-group correlation (same team observations).

Table 6: Changes in Attendances in World Cup Winning Countries

Year	Hosting Country	Winning Country	-1 Year / +1 Year	-2 Years / 2 Years	-3 Years / +3 Years
1966	England	England	14.39%	17.25%	16.92%
1970	Mexico	Brazil	n/a	n/a	n/a
1974	Germany	West Germany	2.40%	15.77%	22.50%
1978	Argentina	Argentina	n/a	n/a	n/a
1982	Spain	Italy	3.37%	16.75%	19.73%
1986	Mexico	Argentina	n/a	n/a	n/a
1990	Italy	West Germany	2.21%	14.52%	20.65%
1994	USA	Brazil	n/a	n/a	n/a
1998	France	France	19.53%	35.05%	45.73%
2002	Korea / Japan	Brazil	n/a	n/a	n/a

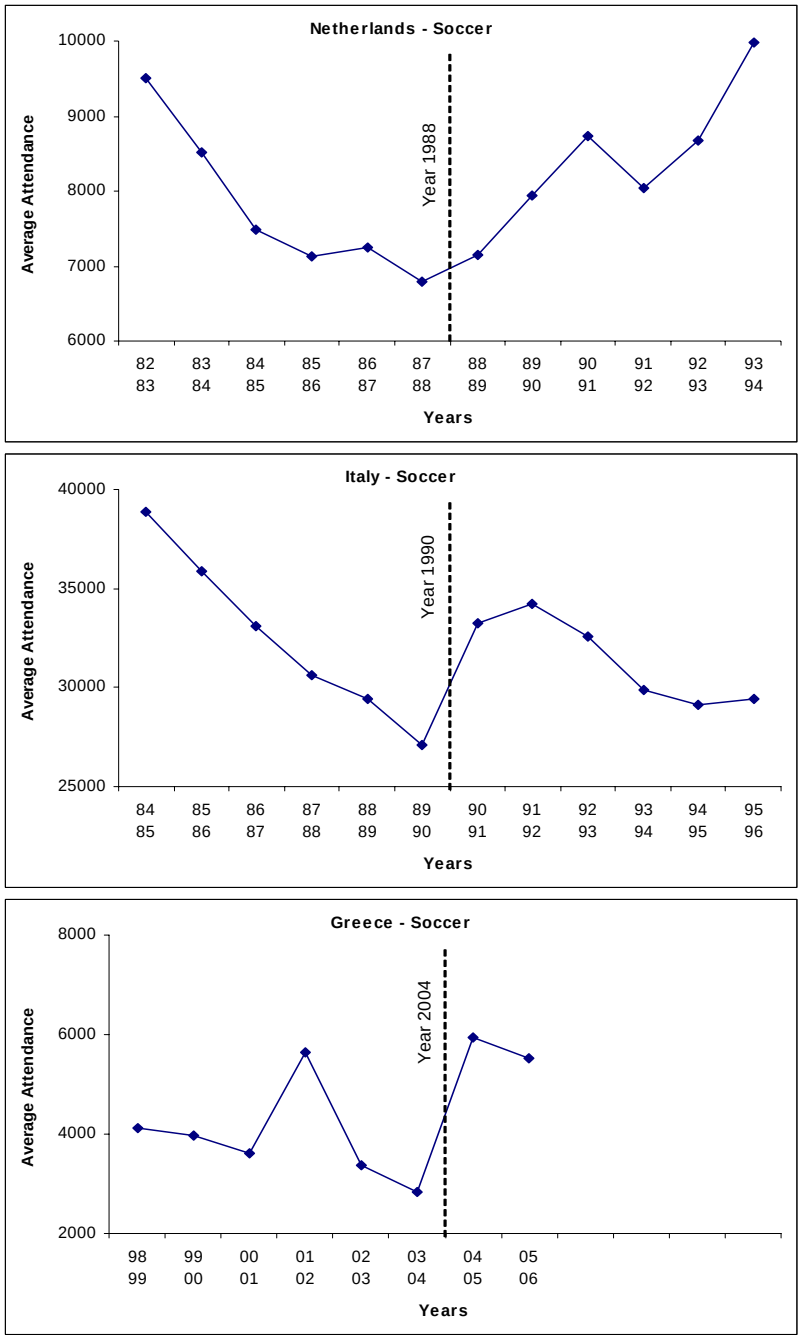
Notes: This table presents the percentage changes in average annual attendance in professional Soccer in countries that have won the Soccer World Cup between 1966 and 2002. We compute the percentage changes using a pre- and a post-victory period of one, two, and three years, respectively. n/a stands for "data not available". Attendance figures have been obtained from the website www.european-football-statistics.co.uk.

Figure 1: Attendances in Other Countries and another Sport



Notes: This figure displays the average annual attendance in professional Soccer in England, France, Germany, Italy and the Netherlands from the 1990-1991 season to the 2002-2003 season. English data concern all the games of the English Premier League, French data concern all the games of the French Soccer First League, German data concern all the games of the Bundesliga, Italian data concern all the games of Serie A, and Dutch data concern all the games of Dutch Eredivisie. Attendance figures in England, Germany, Italy, and the Netherlands have been obtained from the website www.european-football-statistics.co.uk, while attendance figures in France have been provided by the French National Soccer League. The figure also displays in the lower right corner the average annual attendance in professional Basketball in France between the 1994-1995 season and the 2002-2003 season. Basketball data concern all the games of the Pro A League and have been provided by the French National Basketball League. The vertical dotted line represents the 1998 Soccer World Cup.

Figure 2: Other Episodes of Overwhelming Joy



Notes: The upper figure displays the average annual attendance in professional Soccer in the Netherlands around the year 1988, when the Dutch national team won the European Championship (EURO) and a Dutch team, i.e., PSV Eindhoven, won the major European club competition. The intermediate figure displays the average annual attendance in professional Soccer in Italy around the year 1990, when three Italian teams won the three European club competitions, i.e., European Champions Cup (AC Milan), UEFA Cup Winners' Cup (Sampdoria), and UEFA Cup (Juventus). The lower figure displays the average annual attendance in professional Soccer in Greece around the year 2004, when the underdog Greek national team won the 2004 European Soccer Championship. Attendance figures have been obtained from the website www.european-football-statistics.co.uk.

Appendix: List of the Variables and Sources

Attendance: Number of spectators attending a given match (FNSL: French National Soccer League).

Percentage Attendance: Number of spectators attending a given match divided by the maximum capacity of the stadium (FNSL).

Floating Attendance: Number of spectators attending a given match minus the number of season ticket holders (FNSL).

Percentage Floating Attendance: Floating attendance divided by the difference between the maximum capacity of the stadium and the number of season ticket holders (FNSL).

1997/1998: Dummy variable equal to one if the match is played during the 1997/1998 season (First pre-World Cup season), and zero otherwise.

1998/1999: Dummy variable equal to one if the match is played during the 1998/1999 season (First post-World Cup season), and zero otherwise.

1999/2000: Dummy variable equal to one if the match is played during the 1999/2000 season (Second post-World Cup season), and zero otherwise.

1998/2000: Dummy variable equal to one if the match is played after the 1998 World Cup, and zero otherwise.

Standings: Standings of a team determined according to total points. It is computed from the scores of the preceding matches where points are allocated on the basis of three points for a win, one point for a tie, and no points for a loss (FNSL and own calculations).

Budget: Total amount of expenses of a club (measured in millions of French Francs), without considering transfers (FNSL).

Last Score: Dummy variable equal to one if the reference team won its last match, and zero otherwise (FNSL and own calculations).

Last Score at Home: Dummy variable equal to one if the home team won its last match played at home, and zero otherwise (FNSL and own calculations).

European Cup: Dummy variable equal to one if the reference team is still enrolled in a European cup (Champions' League, Cup Winners cup or UEFA cup), and zero otherwise (FNSL).

New Team: Dummy variable equal to one if the reference team has just been promoted from the French Soccer Second League, and zero otherwise (FNSL).

Outcome Uncertainty: Home advantage plus points per game to date of home team minus points per game to date of away team, where home advantage is mean points per game achieved by all

home teams in the previous season minus mean points per game achieved by all away teams in the previous season (FNSL and own calculations).

Summer: Dummy variable equal to one if the match is played in the summer, and zero otherwise.

Autumn: Dummy variable equal to one if the match is played in the autumn, and zero otherwise.

Winter: Dummy variable equal to one if the match is played in the winter, and zero otherwise.

Spring: Dummy variable equal to one if the match is played in the spring, and zero otherwise.

Precipitation: Daily precipitation (in millimeters) recorded at the closest weather station from each club's field (Météo France).

Percentage of Sunshine: Ratio of the hours of sunshine to the theoretical day length, measured in %. The theoretical day length is defined as the time period between sunrise and sunset (Météo France).

Transportation Cost: Price of a round-trip second-class train ticket between the two cities (SNCF: Société Nationale des Chemins de Fer).

Derby: Dummy variable equal to one if the match involves two teams belonging to cities less than one hundred kilometers apart, or involves Marseille and Paris Saint-Germain, and zero otherwise.

TV: Dummy variable equal to one if the match is broadcast live on TV, and zero otherwise (FNSL).

Team Dummy (home): Dummy variable equal to one if the home team is a given team, and zero otherwise. There is one dummy per team.

Team Dummy (away): Dummy variable equal to one if the visiting team is a given team, and zero otherwise. There is one dummy per team.

Host City: Dummy variable equal to one if the match is played after the World Cup in a stadium that has hosted some matches of the 1998 World Cup, and zero otherwise. The stadiums that have hosted the 1998 World Cup are the stadiums of Bordeaux, Lens, Lyon, Marseille, Montpellier, Nantes, Paris Saint-Germain, Saint-Etienne, and Toulouse.