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

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Abstract

Consumer sentiment is a key determinant of the demand for any good or service. However, the identification of periods of pessimistic or optimistic mood remains challenging in practice. In this paper, we consider a natural experiment based on the Soccer World Cup. 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 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. The World-Cup effect persists after we control for season-ticket holders. Finally, we find that the rise in demand is primarily due to infrastructure and victory effects, and not to hosting effects.

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1. Introduction

Sport supporters are consumers of the output of professional sports. Their consumption choices are determined by preferences, income, mood, admission prices, and market conditions. Recent empirical evidence suggests that habits may be an important factor that influences attendance at professional sporting events.[1] Byers, Peel and Thomas (2001) empirically support the notion that British Soccer fans display characteristics of rational addiction in their consumption behavior. A similar conclusion is reached by Spenner, Fenn and Crooker (2004) in their analysis of National Football League fans.

While seriously addicted, fans periodically adjust the portion of their income spent on a given sport in 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 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.[2] 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.

[1] If a given sport is habit-forming, then both past and estimated future attendances significantly affect present attendance.

[2] 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 an interruption due to World War II.

Testing economic theories with sport data has become more and more frequent in the economic literature (Kahn, 2000). Indeed, in some cases, sports offer an excellent setting to document economic concepts such as discrimination (Szymanski, 2000), corruption (Duggan and Levitt, 2002), or endogenous preferences (Garicano, Palacios-Huerta and Prendergast, 2004). In other situations, sport data provide the only way to empirically test the validity of economic models. For instance, the validity of some equilibrium concepts in game theory has been tested using Soccer data on penalty kicks (Chiappori, Levitt, and Groseclose, 2002 and Palacios-Huerta, 2003) or using data on Tennis serves (Walker and Wooders, 2001). In most cases, analyzing sport data turns out to be the only alternative to experimental economics.

Consumer sentiment is a key determinant of the demand for any good or service. However, the identification of periods of pessimistic or optimistic mood remains challenging in practice. In this paper, we investigate the influence of positive mood on consumer behavior using Soccer data. The impact of performance of sport teams on the mood of its fans is a well-known phenomenon. This issue has also been meticulously examined in psychology (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 in the day following a Football victory by Ohio State University. Furthermore, Boyle and Walter (2003) hypothesize, but do not find, a relationship between the performance of the New Zealand national Rugby team and stock returns on the New Zealand 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. Moreover, French fans enjoyed the greatest pleasure to see their own national side win the supreme title. This victory triggered street celebrations throughout the country gathering millions of people from all social backgrounds, races, and genders. However, have all these rejoicings had any impact on the game's popularity in France? One may wonder whether French people have suddenly become Soccer addicts or if this outburst of passion for Soccer was merely prompted by short-lived chauvinistic feelings.

Early statistical figures seem to indicate that French Soccer has benefited from a ”World-Cup effect”. For instance, the French Soccer Association saw the number of its members growing 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 followed a similar evolution after the 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. This result holds both in absolute terms, i.e., number of people attending a match, and in relative terms, i.e, percentage of seats that have been sold. The World-Cup effect persists after we control for season-ticket holders. We also question whether this rise in demand for Soccer in France is due to the facts that (1) the 1998 World Cup took place in France, (2) has permitted to several clubs to modernize their facilities, or (3) has been won by the hosting country. We find that the rise in demand is primarily due to infrastructure and victory effects, and not to hosting effects.

Our conclusions have important implications in the light of the dispute opposing the Fédération Internationale de Football Association (FIFA) and professional clubs. Indeed, professional clubs are getting more and more reluctant to release their star players in favor of national teams. We show that, in compensation, international competitions such as the World Cup promote the game. In particular, our study permits to quantify the externalities on domestic championships that are triggered by national teams’ performance.

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 total points. After each match, points are allocated on the basis of three points for a win, one point for a tie, and zero points for a loss. In case of an equality in the cumulative number of points, the goal difference between cumulative goals scored and goals against is used as a tiebreaker. Unlike professional leagues in the US, the composition of French Soccer leagues changes on an annual basis with a system of promotion and relegation between leagues. At the end of the season, the first two teams of the championship are selected for the European Champions League while the following four or five teams (depending on the ranking of France at the European Soccer index) secure a place in a European Cup. This championship organization allows almost every team 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 of 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.[3] The use of the four seasons surrounding the 1998 World Cup has been dictated by the timing of international Soccer. Indeed, we limit both the pre- and post-World Cup periods to two seasons in order not to contaminate our sample with the presence of other major international competitions, such as the European Championships that took place in 1996 (Victory of Germany, France reached semi-finals) and in 2000 (Victory of France).

According to the burgeoning literature on the demand for sporting events[4], four sets of factors have an impact on the demand for sports: the socio-economic environment, the quality of the opposing teams, the outcome uncertainty, and some incentives factors.[5] We account for the socio-economic environment by using the quarterly regional unemployment rate and the population of the urban center of the home and visiting teams. The quality of the opposing teams is assessed by the

[3] A typical season starts in August and ends in May of the following year.
[4] 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.
[5] A detailed description of the variables used in our empirical tests, along with all sources used, are presented in the Appendix.

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. The outcome uncertainty is measured – at the game level – by the absolute value of the difference between the standings of the opposing teams, and – at the championship level – by the stage of the competition: *Summer* (first games), *Autumn*, *Winter*, and *Spring* (last games). The incentives 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.

The large number of observations in the database, i.e., 1298 matches, allows us to take into account additional exogenous variables without dangerously reducing the number of degrees of freedom. We explicitly control for the size of the stadium where the game takes place (*Stadium Capacity*). We also introduce a team-dummy capturing a fixed effect for the most prestigious teams.[6] Prestige can be due to a memorable path in European cups (Bordeaux, Marseille, Paris Saint-Germain (PSG), Saint-Etienne) and/or many national titles (Lens, Monaco, Nantes). These fixed effects account for reputation or prestige effects that cannot be captured by other controls.

Our dataset 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.

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 data. 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.

[6] Alternatively, one may include a fix effect for most of the twenty-seven teams, while choosing a group of teams as a reference. In this case, since each team accounts for a small portion only of the whole sample, one needs to arbitrary choose a significant number of teams as a reference to get rid of the collinearity problem.

Transportation costs are estimated using the price of a round-trip second-class train ticket between the two cities. This measure takes explicitly 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 closest weather station from each team's field.[7]

We present some descriptive statistics in Table 1. We clearly see that both the attendance and percentage attendance have been on the rise between 1996 and 2000. At the club level, we note some significant differences in terms of average attendance (between 4,856 to 38,999 people), percentage attendance (between 27.8% to 89.0%), number of season ticket holders (from 655 to 26,484 people), and financial resources (annual budgets ranging from 51 to 332 millions of French Francs). Out of the 27 clubs, 14 of them have been continuously playing in the French Soccer Premier League during our sample period (140 matches), the others playing for one, two, or three seasons only, 9 clubs hosted some World Cup matches, and 9 modernized their stadium.

< Insert Table 1 >

The equation explaining attendance is:

$$Attendance_i = \alpha + \beta_E \cdot E_i + \beta_Q \cdot Q_i + \beta_U \cdot U_i + \beta_I \cdot I_i + \beta_S \cdot S_i + \beta_T \cdot T_i + \beta_{WC} \cdot WC_i + \varepsilon_i \qquad (1)$$

where $Attendance_i$ is the logarithm of the total attendance of match i, E_i the set of socio-economic variables, 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 of the supporters, S_i the logarithm of the capacity of the stadium, T_i the team dummies, and WC_i the dummies for the post-World Cup seasons. We estimate the model in Equation (1) by means of a censored regression model or Tobit model (Greene, 2003, pp. 764-780). Indeed, the number of tickets sold is right-

[7] Interestingly, the expected impact of weather conditions on attendance is ambiguous. On 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 which compete with the match for the supporters' leisure time.

censored by the capacity of the stadium.[8] The problem of right censoring might be particularly acute in our case as the capacity of some games venues was drastically reduced during the years prior to the World Cup as stadiums underwent profound renovations.[9] Failing to account for this effect may yield upward biased estimates of the World-Cup effect as it could stem from reduced stadium capacity prior to the event.

To capture another facet of the demand for Soccer, 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 attendance by the maximum capacity of each stadium. Thanks to this alternative specification, we are able to test whether the World-Cup did affect the demand for Soccer also in relative terms. The alternative specification allows one to control more effectively for the capacity constraint facing each club.

Before the presentation of 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. The reason is that clubs often behave as local monopolies and modify admission prices according to the expected attendance. For instance, Falter and Pérignon (2000) report that both the average ticket prices, which is obtained by dividing total gate receipts by the total attendance, and cheapest ticket prices are positively correlated with total attendance in the French Soccer First League.[10] 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 permit 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 extend by the new transfer fee regulation in Europe (Feess and Muehlheusser, 2003 and Fees, Frick, and Muehlheusser, 2004).

[8] In our sample, 9% of the games were sold out. We consider a game sold out when the attendance is equal or larger than 95% of the stadium capacity.

[9] This was typically the case in Marseille were the capacity dropped from approximately 50,000 to 25,000 seats during the stadium upgrading period and reached a 55,000 people capacity once the work was completed.

[10] 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.

The exodus of the most talented French players towards foreign leagues 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 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 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 whatever 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.[11] 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 of course 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.

< Insert Tables 2 and 3 >

While the present paper does not aim to identify the main determinants of the demand for Soccer, it is still worth commenting the results obtained on the control variables. In Table 2, we report a

[11] The p-value associated with test for the equality of the two coefficients is 0.000.

significant negative relationship between attendance and the local unemployment rate and a significant positive relationship between attendance and the population of the hosting town, which captures a market size effect. We find a strong positive correlation between the budget of the home team and attendance. Not surprisingly, top-ranked teams generally attract greater crowd – 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*). We find a negative effect from the presence of the home team competing in a European Cup, suggesting 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 most famous continental teams. On the other hand, when the visiting team is still enrolled in a European cup, the attendance is particularly high, which is consistent with a typical quality effect. Furthermore, new teams that have just been promoted from the Second League seem to benefit from a particularly strong local support.

The impact of outcome uncertainty on attendance is captured in two manners. First, the standings differential, which is a match-specific measure of uncertainty, does not explain a significant part of Soccer attendance. 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 positively to other incentives. We find that transportation costs are negatively related to attendance, and that local or historical rivalries draw unexpectedly large crowds (*Derby*). On the other hand, live TV broadcasting and weather do not seem to be relevant determinants of the attendance when all the main influences are properly accounted for.[12] Not surprisingly, the coefficient on the logarithm of the *Stadium Capacity* variable, which is an elasticity coefficient, is significantly positive.

Most of the coefficient estimates on the dummies for the most prestigious teams are positive and statistically significant at the five-percent significant level. This means that, on the basis of their

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

quality, budget, and other characteristics, these teams attract an abnormally large crowd. Notice that this effect operates both at home and on the road. These results confirm that prestigious teams boast more fans than other league members. There are three notable exceptions though: Home games of Monaco (negative and significant coefficient) and Paris Saint-Germain (PSG) and away games of Lens (the latter two coefficients are positive but fail to be significantly different from zero). While the coefficients attached to Monaco and Lens should not surprise any Soccer connoisseur[13], the PSG parameters may seem more puzzling as this team has one of the highest attendances of France. Yet, our results seem to indicate that the attendance of this club is below its true potential.

When the percentage attendance is used in place of the total attendance, the conclusions remain unchanged (see Table 3). However, as one may expect, the coefficient on the logarithm of the *Stadium Capacity* variable becomes negative.

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:

$$\textit{Floating Attendance}_i = \alpha + \beta_E \cdot E_i + \beta_Q \cdot Q_i + \beta_U \cdot U_i + \beta_I \cdot I_i + \beta_S \cdot S_i^* + \beta_T \cdot T_i + \beta_{WC} \cdot WC_i + \varepsilon_i \quad (2)$$

where S_i^* is the logarithm of the floating capacity of the stadium, which is defined as the capacity of the stadium reduced by the number of season ticket holders.

Regression results are reported in Table 4. We see that the World-Cup effect remains statistically significant for both non-season ticket attendance and percentage floating attendance. This indicates that the World Cup also had an impact on the number of occasional supporters. The other

[13] Monaco is a very peculiar team since Soccer has never been popular in the one-square mile Principality, despite the good performance of the team. On the other hand, Lens benefits from an overwhelming support at home, but has never been really attractive out-of-town.

coefficient estimates are rather consistent with those obtained from non-adjusted attendances in Tables 2 and 3. As expected, the effect of some factors are magnified when season ticket holders are excluded from the analysis. This is especially true with respect to quality and incentives variables such as *European Cup* (home), *Percentage of Sunshine*, and *Derby*. As far as team fixed effects are concerned, one can remark that the Marseille coefficients are not different from zero. In this case, it shows that the attendance is mainly made up of season ticket holders.[14]

< Insert Table 4 >

3.3. World-Cup Effects on Other Sports and Other Countries

We now investigate whether the identified rise in the demand for professional Soccer in France is an isolated evolution or is caused by an overall gain in popularity of professional sports. We consider the demand for professional Basketball in France as a control sport and the demand for professional Soccer in three control countries, i.e., England, Germany, and Italy. In Figure 1, we contrast the evolution of average annual attendance in Basketball and Soccer between 1994 and 2003 in France. We clearly see that the demand for Soccer has been on the rise since the beginning of the sample period and has been boosted by the 1998 World Cup. On the contrary, Basketball average attendance has been rather stable over our sample period and momentarily dropped after 1998. In Figure 2, 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 and -1.0% in Italy).

< Insert Figures 1 and 2 >

[14] The season ticket effect observed in Marseille can also be explained by the peculiar deal that exists between the club and their most loyal fans. Since the late 1980's, season tickets are sold by supporter groups ("Les Ultras"). They intentionally keep the price low as their goal is to increase the fan base and not to maximize the profit from the sale of season tickets.

3.4. Disentangling Hosting, Infrastructure, and Victory Effects

The event investigated in this paper combines several interesting features. First, the 1998 World Cup has been hosted by nine French cities.[15] As each city spent millions of French Francs in promotion and entertainment, the World-Cup effect may be particularly strong in the cities that hosted the competition. This first effect is similar to an advertising campaign on Soccer. Second, 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.[16] Third, the hosting country, i.e., France, won the supreme title.[17] As the latter feature is directly associated with fans' joy, it will be our central effect in the following analysis. Consequently, the World-Cup effect identified in France may be caused by the three aforementioned influences: a hosting effect, an infrastructure effect, and finally, a victory effect.

In this section, we endeavor to disentangle the importance of the three effects. We formally control for the hosting effect by using a variable called *Host* that is equal to one when a given match is played in a stadium that has hosted some World-Cup games, and zero otherwise. By construction, the *Host* variable is always equal to zero prior to the 1998 World Cup. The introduction of this new variable permits to test whether the rise in demand following the 1998 World Cup has been more severe in cities that did host some World-Cup games. Furthermore, to test whether facility enhancement programs have generated a net inflow of supporters, we create a variable called *New Stadium*, which takes a value of one as soon as the enhancement program is completed, and zero beforehand. As some stadiums have been renovated well before the World Cup, the *New Stadium* variable may take a value of one before 1998. Once hosting and infrastructure effects have been properly accounted for, the World-Cup dummy should predominantly capture the victory effect.

Table 5 reports the TOBIT estimates for different specifications of our extended attendance model. Our benchmark attendance model is summarized in Panel A (see Equation 1 and Tables 2 and 3 for more details). In Panel B, we formally control for hosting and infrastructure effects by introducing the *Host* and *New stadium* variables in the attendance model. In this case, the coefficient estimates

[15] The cities that have hosted World-Cup games in 1998 are Bordeaux, Lens, Lyon, Marseille, Montpellier, Nantes, Paris, Saint-Etienne, and Toulouse.
[16] See Siegfried and Zimbalist (2000) for a survey of the economics of sport facilities.
[17] Six World Cups have been won by the hosting country (Uruguay-1930, Italy-1934, England-1966, West Germany-1974, Argentina-1978, and France-1998).

associated with the *1998/2000* and *New stadium* variables are statistically significant, while the one on the *Host* variable fails to be different from zero. Finally, in Panel C, we decompose the post-World Cup period into two subperiods of one year. Based on these regressions, we reach two conclusions. First, the witnessed rise in demand seems to be primarily due to infrastructure and victory effects, and not to hosting effects. Second, the victory effect is economically and statistically significant and persistent through time.

< Insert Table 5 >

3.5. Implications for the Conflict Opposing Professional Clubs to the FIFA

Our conclusions have important implications in the light of the passionate debate opposing professional clubs and the 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 compensations. 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 supported during events like the World Cup or the European Championship, but also during 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, number of players of 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 European professional clubs – has filed a complaint with the Swiss Competition Commission regarding the problems caused by non-compensated release of club players in favor of national teams.[18]

[18] The case has been filed in Switzerland because FIFA headquarter is located in Zurich, Switzerland.

We show in this paper that, in compensation, international competitions such as the World Cup promote the game. 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 the rather extreme situation of a World-Cup victory by the hosting country.

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 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. The World-Cup effect persists after we control for season-ticket holders. Finally, we find that the rise in demand is primarily due to infrastructure and victory effects, and not to hosting effects. Our conclusions have important implications in the light of dispute that opposes professional clubs to the FIFA. While clubs are getting more and more reluctant to release their star players in favor of national teams, we show that, in compensation, international competitions promote the game.

While this study shows that great performance of a national side produces positive externalities on the domestic demand for sports, one may wonder whether bad performance may, in a similar way, negatively affect game's popularity. Casual evidence seems to support this suggestion since the recent poor performance of the French national team coincides with a decline in the demand for football which started in 2001.

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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	New Stadium
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	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	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	Yes
Marseille	36,357	0.8441	26,484	70	275	Yes	Yes
Metz	17,042	0.6798	6,205	70	105	-	Yes
Monaco	7,971	0.4555	755	70	275	-	-
Montpellier	12,859	0.4222	4,511	70	85	Yes	Yes
Nancy	10,203	0.5044	3,104	53	57	-	-
Nantes	25,097	0.6502	9,800	70	164	Yes	Yes
Nice	5,024	0.2783	655	19	51	-	-
Paris S.G.*	38,999	0.8719	16,092	70	332	Yes	Yes
Rennes	13,805	0.7610	3,943	70	102	-	Yes
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 or has been modernized during our sample period. 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

Variables	Estimates	(p-values)	Estimates	(p-values)	Estimates	(p-values)
Constant	4.192	(0.000)	4.104	(0.000)	4.104	(0.000)
World-Cup Effect						
1997/1998	-		-		-0.001	(0.985)
1998/1999	-		0.144	(0.000)	0.144	(0.000)
1999/2000	-		0.223	(0.000)	0.223	(0.000)
1998/2000	0.172	(0.000)	-		-	
Socio-Economic Variables						
Unemployment Rate (home)	-0.034	(0.000)	-0.032	(0.000)	-0.032	(0.000)
Unemployment Rate (away)	-0.001	(0.782)	0.001	(0.744)	0.001	(0.743)
Population (home)	0.209	(0.000)	0.211	(0.000)	0.211	(0.000)
Population (away)	-0.040	(0.099)	-0.037	(0.130)	-0.037	(0.140)
Quality Variables						
Standings (home)	-0.009	(0.000)	-0.009	(0.000)	-0.009	(0.000)
Standings (away)	-0.010	(0.000)	-0.011	(0.000)	-0.011	(0.000)
Budget (home)	0.001	(0.000)	0.001	(0.000)	0.001	(0.000)
Budget (away)	0.000	(0.819)	0.000	(0.705)	0.000	(0.727)
Last Score (home)	0.051	(0.006)	0.051	(0.007)	0.051	(0.007)
Last Score (away)	-0.019	(0.230)	-0.021	(0.195)	-0.021	(0.195)
Last Score at Home (home)	0.035	(0.029)	0.034	(0.032)	0.034	(0.032)
European Cup (home)	-0.053	(0.039)	-0.059	(0.022)	-0.059	(0.023)
European Cup (away)	0.066	(0.009)	0.062	(0.014)	0.062	(0.016)
New Team (home)	0.128	(0.000)	0.137	(0.000)	0.137	(0.000)
New Team (away)	0.001	(0.972)	0.010	(0.704)	0.010	(0.704)
Outcome Uncertainty						
Standings Differential	0.000	(0.929)	0.000	(0.971)	0.000	(0.971)
Summer	-0.052	(0.032)	-0.058	(0.017)	-0.058	(0.017)
Autumn	-0.205	(0.000)	-0.206	(0.000)	-0.206	(0.000)
Winter	-0.166	(0.000)	-0.169	(0.000)	-0.169	(0.000)
Incentives						
Precipitation	-0.828	(0.525)	-0.909	(0.484)	-0.909	(0.484)
Percentage of Sunshine	-0.002	(0.926)	-0.003	(0.904)	-0.003	(0.905)
Transportation Cost	-0.181	(0.000)	-0.176	(0.000)	-0.176	(0.001)
Derby	0.131	(0.000)	0.130	(0.000)	0.130	(0.000)
TV	0.019	(0.559)	0.020	(0.529)	0.020	(0.529)
Stadium Capacity						
Stadium Capacity (log)	0.560	(0.000)	0.562	(0.000)	0.562	(0.000)
Team Fixed Effects						
Bordeaux (home)	0.173	(0.000)	0.165	(0.000)	0.164	(0.000)
Bordeaux (away)	0.178	(0.000)	0.169	(0.000)	0.169	(0.000)
Lens (home)	0.667	(0.000)	0.654	(0.000)	0.654	(0.000)
Lens (away)	0.057	(0.194)	0.046	(0.297)	0.046	(0.311)
Marseille (home)	0.367	(0.000)	0.345	(0.000)	0.345	(0.000)
Marseille (away)	0.506	(0.000)	0.485	(0.000)	0.485	(0.000)
Monaco (home)	-0.950	(0.000)	-0.923	(0.000)	-0.924	(0.000)
Monaco (away)	0.140	(0.024)	0.165	(0.008)	0.165	(0.010)
Nantes (home)	0.265	(0.000)	0.261	(0.000)	0.261	(0.000)
Nantes (away)	0.115	(0.001)	0.113	(0.001)	0.113	(0.001)
Paris Saint-Germain (home)	0.052	(0.375)	0.045	(0.444)	0.045	(0.453)
Paris Saint-Germain (away)	0.334	(0.000)	0.325	(0.000)	0.324	(0.000)
Saint-Etienne (home)	0.171	(0.024)	0.123	(0.108)	0.123	(0.113)
Saint-Etienne (away)	0.253	(0.001)	0.207	(0.006)	0.207	(0.007)
Log L	-178.99		-173.43		-173.43	

Table 3: Regression Results for the Percentage Attendance

Variables	Estimates	(p-values)	Estimates	(p-values)	Estimates	(p-values)
Constant	3.088	(0.000)	3.029	(0.000)	3.031	(0.000)
World-Cup Effect						
1997/1998	-		-		0.003	(0.841)
1998/1999	-		0.086	(0.000)	0.087	(0.000)
1999/2000	-		0.138	(0.000)	0.139	(0.000)
1998/2000	0.104	(0.000)	-		-	
Socio-Economic Variables						
Unemployment Rate (home)	-0.017	(0.000)	-0.015	(0.000)	-0.015	(0.000)
Unemployment Rate (away)	-0.001	(0.718)	0.001	(0.712)	0.001	(0.721)
Population (home)	0.119	(0.000)	0.121	(0.000)	0.121	(0.000)
Population (away)	-0.016	(0.222)	-0.014	(0.291)	-0.013	(0.328)
Quality Variables						
Standings (home)	-0.004	(0.000)	-0.004	(0.000)	-0.004	(0.000)
Standings (away)	-0.006	(0.000)	-0.006	(0.000)	-0.006	(0.000)
Budget (home)	0.001	(0.000)	0.001	(0.000)	0.001	(0.000)
Budget (away)	0.000	(0.904)	0.000	(0.766)	0.000	(0.857)
Last Score (home)	0.031	(0.003)	0.031	(0.003)	0.031	(0.003)
Last Score (away)	-0.010	(0.239)	-0.011	(0.199)	-0.011	(0.200)
Last Score at Home (home)	0.023	(0.009)	0.022	(0.011)	0.022	(0.011)
European Cup (home)	-0.024	(0.087)	-0.028	(0.046)	-0.028	(0.052)
European Cup (away)	0.031	(0.025)	0.028	(0.039)	0.029	(0.039)
New Team (home)	0.079	(0.000)	0.085	(0.000)	0.085	(0.000)
New Team (away)	-0.005	(0.734)	0.001	(0.945)	0.001	(0.962)
Outcome Uncertainty						
Standings Differential	-0.001	(0.553)	-0.001	(0.510)	-0.001	(0.515)
Summer	-0.043	(0.001)	-0.047	(0.000)	-0.047	(0.000)
Autumn	-0.120	(0.000)	-0.120	(0.000)	-0.120	(0.000)
Winter	-0.099	(0.000)	-0.100	(0.000)	-0.100	(0.000)
Incentives						
Precipitation	-0.265	(0.711)	-0.319	(0.655)	-0.319	(0.655)
Percentage of Sunshine	0.006	(0.645)	0.006	(0.667)	0.005	(0.676)
Transportation Cost	-0.089	(0.001)	-0.085	(0.002)	-0.085	(0.002)
Derby	0.082	(0.000)	0.082	(0.000)	0.082	(0.000)
TV	0.013	(0.449)	0.014	(0.417)	0.014	(0.425)
Stadium Capacity						
Stadium Capacity (log)	-0.233	(0.000)	-0.232	(0.000)	-0.232	(0.000)
Team Fixed Effects						
Bordeaux (home)	0.082	(0.000)	0.076	(0.001)	0.077	(0.001)
Bordeaux (away)	0.099	(0.000)	0.093	(0.000)	0.094	(0.000)
Lens (home)	0.360	(0.000)	0.351	(0.000)	0.352	(0.000)
Lens (away)	0.032	(0.180)	0.025	(0.304)	0.026	(0.295)
Marseille (home)	0.196	(0.000)	0.182	(0.000)	0.184	(0.000)
Marseille (away)	0.309	(0.000)	0.295	(0.000)	0.297	(0.000)
Monaco (home)	-0.493	(0.000)	-0.475	(0.000)	-0.474	(0.000)
Monaco (away)	0.089	(0.009)	0.105	(0.002)	0.107	(0.002)
Nantes (home)	0.125	(0.000)	0.123	(0.000)	0.123	(0.000)
Nantes (away)	0.064	(0.001)	0.062	(0.001)	0.063	(0.001)
Paris Saint-Germain (home)	0.042	(0.197)	0.036	(0.258)	0.037	(0.251)
Paris Saint-Germain (away)	0.191	(0.000)	0.185	(0.000)	0.187	(0.000)
Saint-Etienne (home)	0.091	(0.028)	0.059	(0.155)	0.061	(0.151)
Saint-Etienne (away)	0.157	(0.000)	0.127	(0.002)	0.128	(0.002)
Log L	509.41		517.51		517.53	

Table 4: Regression Results when Controlling for Season Ticket Holders

	Floating Attendance		Percentage Floating Attendance	
Variables	**Estimates**	**(p-values)**	**Estimates**	**(p-values)**
Constant	5.399	(0.000)	3.077	(0.000)
World-Cup Effect				
1998/2000	0.081	(0.007)	0.057	(0.000)
Socio-Economic Variables				
Unemployment Rate (home)	-0.050	(0.000)	-0.018	(0.000)
Unemployment Rate (away)	0.001	(0.832)	0.001	(0.612)
Population (home)	0.300	(0.000)	0.128	(0.000)
Population (away)	-0.083	(0.033)	-0.029	(0.054)
Quality Variables				
Standings (home)	-0.017	(0.000)	-0.007	(0.000)
Standings (away)	-0.014	(0.000)	-0.007	(0.000)
Budget (home)	0.000	(0.864)	0.000	(0.174)
Budget (away)	0.001	(0.064)	0.000	(0.053)
Last Score (home)	0.034	(0.260)	0.029	(0.011)
Last Score (away)	-0.008	(0.747)	-0.012	(0.235)
Last Score at Home (home)	0.044	(0.083)	0.029	(0.003)
European Cup (home)	-0.172	(0.000)	-0.062	(0.000)
European Cup (away)	0.053	(0.189)	0.020	(0.188)
New Team (home)	0.083	(0.048)	0.050	(0.002)
New Team (away)	-0.033	(0.417)	0.002	(0.895)
Outcome Uncertainty				
Standings Differential	0.000	(0.932)	-0.001	(0.433)
Summer	-0.063	(0.105)	-0.064	(0.000)
Autumn	-0.256	(0.000)	-0.148	(0.000)
Winter	-0.209	(0.000)	-0.126	(0.000)
Incentives				
Precipitation	-0.091	(0.965)	-0.433	(0.585)
Percentage of Sunshine	0.070	(0.067)	0.020	(0.164)
Transportation Cost	-0.252	(0.002)	-0.096	(0.002)
Derby	0.269	(0.000)	0.128	(0.000)
TV	0.059	(0.256)	0.027	(0.169)
Stadium Capacity				
Floating Stadium Capacity (log)	0.443	(0.000)	-0.235	(0.000)
Team Fixed Effects				
Bordeaux (home)	0.342	(0.000)	0.122	(0.000)
Bordeaux (away)	0.251	(0.000)	0.111	(0.000)
Lens (home)	0.846	(0.000)	0.351	(0.000)
Lens (away)	0.032	(0.644)	0.011	(0.671)
Marseille (home)	0.011	(0.900)	0.025	(0.446)
Marseille (away)	0.648	(0.000)	0.337	(0.000)
Monaco (home)	-0.618	(0.000)	-0.286	(0.000)
Monaco (away)	0.181	(0.067)	0.110	(0.003)
Nantes (home)	0.354	(0.000)	0.131	(0.000)
Nantes (away)	0.150	(0.007)	0.070	(0.001)
Paris Saint-Germain (home)	0.332	(0.000)	0.152	(0.000)
Paris Saint-Germain (away)	0.440	(0.000)	0.214	(0.000)
Saint-Etienne (home)	0.444	(0.000)	0.192	(0.000)
Saint-Etienne (away)	0.358	(0.003)	0.172	(0.000)
Log L	-736.15		374.63	

Captions Tables 2, 3, and 4:

Notes Table 2: This table reports the parameter estimates and associated p-values for the attendance model presented in Equation (1). The explained variable is the logarithm of the total attendance of every match. We estimate each model using a Tobit model and we report the value of the log-likelihood function (Log L).

Notes Table 3: This table reports the parameter estimates and associated p-values for the attendance model presented in Equation (1). The explained variable is the percentage total attendance of every match, which is obtained by dividing the attendance by the maximum capacity of each stadium. We estimate each model using a Tobit model and we report the value of the log-likelihood function (Log L).

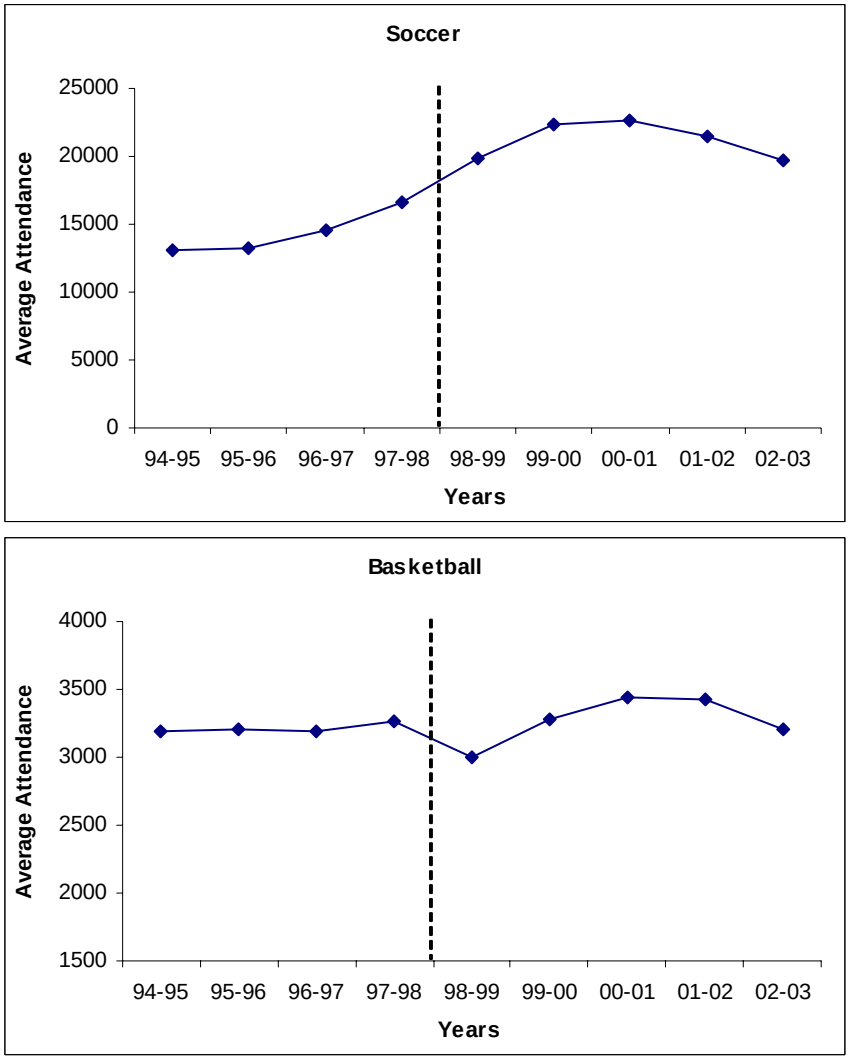
Notes Table 4: This table reports the parameter estimates and associated p-values for the attendance model presented in Equation (2). The explained variable is the logarithm of the floating attendance, which is obtained by subtracting the number of season ticket holders from the total attendance, and 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. We estimate each model using a Tobit model and we report the value of the log-likelihood function (Log L).

Table 5: Hosting, Infrastructure, and Victory Effects

	Attendance	Percentage Attendance
Variables	**Estimates (p-values)**	**Estimates (p-values)**
Panel A		
1998/2000	0.172 (0.000)	0.104 (0.000)
Panel B		
1998/2000	0.124 (0.000)	0.062 (0.000)
New Stadium	0.077 (0.007)	0.054 (0.001)
Host	0.020 (0.560)	0.033 (0.075)
Panel C		
1998/1999	0.103 (0.000)	0.048 (0.001)
1999/2000	0.174 (0.000)	0.095 (0.000)
New Stadium	0.065 (0.023)	0.046 (0.004)
Host	0.024 (0.483)	0.036 (0.054)

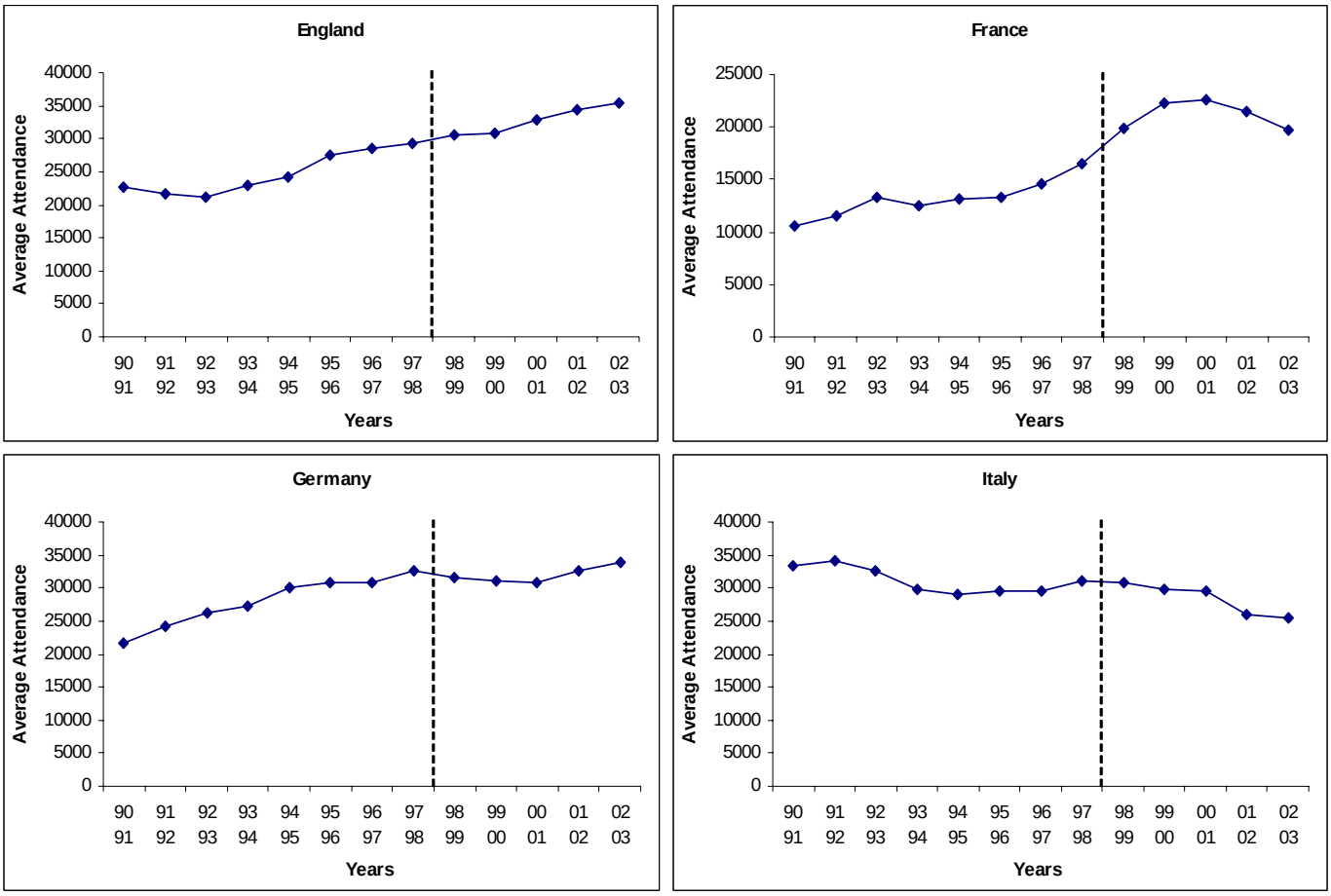
Notes: This table reports the parameter estimates and associated p-values for the explanatory variables capturing the hosting, infrastructure, and victory effects. Parameter estimates on other control variables are not reported. Panel A summarizes our base attendance model estimated in Tables 2 and 3. In Panel B, we control for the fact that the stadium has been renovated (*New Stadium*) and for the fact that a given match is played in a stadium that has hosted some 1998 World-Cup games (*Host*). Finally, in Panel C, we decompose the post-World Cup period into two subperiods of one year. We estimate each model using a Tobit model using alternatively the total attendance and the percentage attendance as the explained variable.

Figure 1: Soccer and Basketball Attendance in France



Notes: This figure displays the average annual attendance in professional Basketball and professional Soccer 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. Soccer data concern all the games of the French Soccer First League and have been obtained from the French National Soccer League. The vertical dotted line represents the 1998 Soccer World Cup.

Figure 2: Soccer Attendance in England, France, Germany, and Italy



Notes: This figure displays the average annual attendance in professional Soccer in England, France, Germany, and Italy 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, and Italian data concern all the games of Serie A. Attendance figures in England, Germany, and Italy 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 vertical dotted line represents the 1998 Soccer World Cup.

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.

Unemployement Rate: Half-yearly regional unemployement rate (INSEE: Institut National de la Statistique et des Etudes Economiques).

Population: Population of the urban center of a team, 1990 census (INSEE).

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).

Standings Differential: Difference between the standings of the two opposing team, in absolute value (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 opposes two teams coming from cities separated by less than one hundred kilometers, or opposes 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).

Stadium Capacity: Maximum capacity of a given stadium (FNSL).

Floating Stadium Capacity: Maximum capacity of a given stadium minus the number of season ticket holders.

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.

New Stadium: Dummy variable equal to one once the stadium enhancement program is completed, and zero beforehand (various sources and club websites).

Host: Dummy variable equal to one if the match is played 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.