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Transmission channels of financial crises: Illustration through attendances in French football

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Abstract :

The aim of this article is two-fold: first, to provide a conceptual contribution through the identification of the transmission channels of financial crises in football; second, to illustrate one of these channels through the example of attendance in French football over the period 1997-2013. The article identifies nine transmission channels with six for fundraising and three for demand, the latter incorporating households that includes attendance. The principal results are: (i) a significant positive impact of Gross Domestic Income per capita on attendance which confirms that the latter is affected by financial crises; (ii) a significant impact of year dummies also consistent with a negative impact of financial crises; (iii) a significant positive impact of the unemployment rate which becomes negative when controlling for team effect. The main conclusions are that the existence of a significant impact both for Gross Domestic Income per capita and year effect may indicate a double negative impact of financial crises on attendance (less money and more saving for fans); and although attendance is better in areas with higher unemployment rates in football, clubs are negatively affected by an increase in the unemployment rate.

JEL classification: C25, G01, L83, Z23

Keywords: football, financial crises, transmission channels, attendance

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1. Introduction

The current economic crisis is the largest faced by capitalism since the shock of the 1930s (Grossman and Meissner [2010]). While its beginnings can be traced to the subprime mortgage or lending crisis in the USA in 2006, the prevalence of financial innovations in the lending market quickly resulted in a more generic and worldwide financial crisis which in turn developed into an economic crisis. In turn the subprime crisis is linked to a previous crisis, the so-called dot.com bubble (Wang [2007]). It occurred in the beginning of the 2000s in the USA following intense speculation on Information and Communication Technologies (ICT), shares and especially on *Internet* companies. This crisis reached the European continent in the middle of 2001. It was mainly characterized by a strong stock market crash and resulted in some companies becoming bankrupt due to their debt levels. As a result of the stock-market crash, speculators turned their attention to the property market. Here lie the origins of the subprime crisis.

Several studies have shown how these two financial crises, and more specifically the subprime crisis, affected the global economy (Campello et al. [2010], Chudik and Fratzscher, [2011], Claessens et al. [2012]) or a particular industry (de Belvis et al. [2012], Benmelech et al. [2017]) by identifying transmission processes. We highlight two main transmission mechanisms. The first is the negative wealth effect (Furceri and Mourougane [2010], Guo et al. [2011]). In fact, the financial assets of economic agents have declined because the crisis has caused a drop in stock market and in real estate market prices. The second mechanism is the so-called credit crunch (Claessens et al. [2012], Mishkin [2011], Popov and Udell [2012]). The banking and liquidity crises that were revealed during the subprime crisis (Chudik and Fratzscher [2011], Guo et al. [2011]; Popov and Udell [2012]) have limited the loans supply from banks to households and firms. The consequence of these two main transmission channels was a slowdown in economic activity. Corporate investment (Campello et al. [2010], Duchin et al. [2010]) and private consumption have decreased (Lane and Milesi-Ferretti [2011]), causing a global collapse in trade and a sharp increase in unemployment rate (Claessens et al. [2010]).

In this context, we suggest a new application. We investigate whether these times of crisis have affected a very special industry, namely the professional sport industry and more specifically the professional football industry. Ostensibly this suggestion may seem surprising in view of the popularity and wealth of a sport like football. Indeed, when we observe its main geographical market, the European continent¹, professional football seems to have been spared from the repercussions of the current crisis. The incomes of the European top tier clubs have risen annually since 1996 at an average rate of 9.3% and reached a record €16,9bn (UEFA [2017]). At the same time players' wages have grown at an annual equivalent rate of 10% over the last twenty years and are now equivalent to €10,6bn (UEFA [2017]). These levels of growth are quite extraordinary given that this has taken place at a time when European economic growth of only 1.5% pa has been recorded over the same period (UEFA [2017]).

However, at the same time, some indicators suggest that football faces financial difficulties. Firstly, clubs' net debt across the top 20 European leagues has exceeded €6.5bn between 2009 and 2015. This last year, clubs have accumulated €6,7b of debt. Secondly, European football clubs are unprofitable. Between 2008 and 2015, collectively European clubs did not report a profit. For example, in 2010 and 2011, clubs' net losses were more than €1,6bn. They subsequently reduced and the clubs' net losses were €323m in 2015 but they were still unprofitable [UEFA]. This is consistent with the hypothesis that European football clubs are utility rather than profit maximisers, i.e. that their aim is to win on the pitch (Sloane [1971]). Historically, a number of English (Szymanski [2017]) and French (Scelles et al. [2016]) football clubs have been insolvent, showing that European football clubs have always encountered financial difficulties.

¹ The most lucrative championships, tournament (the *Champions League*), teams and highest earning players in the world are in Europe.

The aim of this paper is to identify whether both the dot.com bubble and the subprime crises have impacted upon European professional football, and in particular to determine the mechanisms by which these crises have transmitted to the clubs. Beyond the quantitative contribution, the originality of this paper is also conceptual. Indeed, we suggest an analytical framework to understand the effects of financial crises in football.

The first part of the paper provides a review of relevant literature. We establish that the academic studies dealing with the impact of a recession on football, and more generally on sport, are scarce. Based on these, in the following sections we show that both the dot.com and the subprime crises have impacted football clubs in two ways. First, we demonstrate that these crises have had an impact on clubs' fundraising through six transmission channels. Second, we explain that the crises have had an effect on the clubs' demand through three transmission channels. This framework is based on several assumptions, some of which are supported by examples. Hence we propose an empirical investigation in the next part of the article to check one of our assumptions. More specifically, we test the household channel, which affects the clubs on their demand side. To this end, we use attendance in French football.

2. Literature review

2.1. *Impact of recession on sport*

Academic studies dealing with the impact of a recession on sport remain scarce. Some studies deal with the impact of the recent crisis on sport as a whole in individual countries including Turkey (Coskuner et al. [2011], Devecioglu et al. [2011]), Moldova (Cainarean et al. [2011]), and Slovenia (Jurak et al. [2014]). Some other studies have investigated the consequences of the recent economic recession on major professional sports in North America. Humphreys [2010] shows that the 2007 crisis has had an impact on the five major professional sport leagues in North America. This is indicated by the decrease in attendance and franchise values, and the financial troubles of some franchises. Nevertheless, Humphreys explains that the consequences of the crisis are limited, in particular thanks to the level of broadcasting rights and the fact the multi-year nature of agreements has sheltered the various leagues and franchises. Hong et al. [2013] study the effects of the 2007 crisis on *Major League Baseball*. They rely on a regression model to demonstrate that the degradation of the economic conditions during the recession has led to a reduction of 6% in attendance between 2008 and 2009. The authors use the *composite index of coincident indicators* provided by the *Federal Reserve Bank of Philadelphia* to measure the economic conditions. This index brings several indicators together every month at the State level. Lastly, at a conceptual level Andreff [2009, 2010, 2012] identifies six transmission channels to define the effects of the crisis on sports finance: household sports expenditure, local authorities, national government expenditures, sponsor companies, media enterprises, and lotteries and bookmakers.

2.2. *Impact of recession on European professional football*

The first article investigating the impact of crisis on professional football dates back to the early 1980s in which Taylor [1984] analysed the consequences of the 1970s recession on British football. The oil shock resulted in an increase in unemployment, inflation and social tensions and mainly affected the working class that tended to fill the stadiums at that time. Consequently, attendance decreased so gate receipts decreased too. Incomes from sponsoring and advertising also decreased due to a ripple effect and many clubs like Chelsea or Cardiff found themselves in a liquidity crisis due to high levels of wages and high indebtedness. Taylor adds that the development of defensive strategies in British football also explains the decrease in attendance at that time.

Following Taylor's study, all subsequent studies are focused on the recent economic crisis. Mnzava [2011] explores the effects of the 2007 crisis on English premiership football and suggests that clubs were affected by the problems faced by sponsors like Northern Rock, by a reduction in the number of spectators, and by financial problems faced by media companies like *Setanta*. Castellanos-Garcia et al. [2014] are also interested in the impact of the current economic crisis on football. They use a *Contingent Value Method* to demonstrate that the current economic crisis affects the *willingness to pay* of the residents in La Coruna metropolitan area to maintain the Spanish football club the Deportivo La Coruna in First Division because their budget constraint is harder. They also show that the club's sporting performances impact upon residents' *willingness to pay*, but do not specify whether economic crisis or sporting underperformance is the most influential. Most recently Barget and Brocard [2015] identify the impact of the 2007 crisis on European professional football in four countries (Greece, Spain, France and England) using four financial indicators over the period 2007 to 2012: club incomes, club payrolls, transfer fees, and stadium attendance. According to the authors, although the impact of the crisis is not obvious², they suggest that it has contributed an increased financial gap between clubs in the same league.

3. The impact of the financial crises on football clubs fundraising

Because they are win-maximisers (Kesenne [1996]), clubs in European football leagues are engaged in an "arms race" (Sanderson [2003]) to recruit the best players. Each club wants to build the best team to win trophies. Consequently, both the wages and the transfer fees are constantly increasing, with inevitable implications in terms of clubs' financing needs. We assume in this section that both the dot.com bubble and the subprime crises impacted upon clubs' fundraising. More specifically, in the first instance, we demonstrate that these crises may have impacted clubs similarly to other firms via four transmission channels. In the second instance, we identify two transmission channels in the specific case of football.

3.1. Common transmission mechanisms: Share price channel, interest rate channel, credit channel and exchange rate channel

During both the dot.com bubble and the subprime crisis, a sharp drop in stock prices was observed. In these two cases, major global indices fell throughout the entire world between 2000 and 2003³ and between the end of 2007 and the beginning of 2009⁴. During the 1990s a small number of European football clubs use the stock exchange listing as a way of accessing new funds among other motivations. We assume that these two periods of crash have affected clubs as any other company quoted on a stock market.

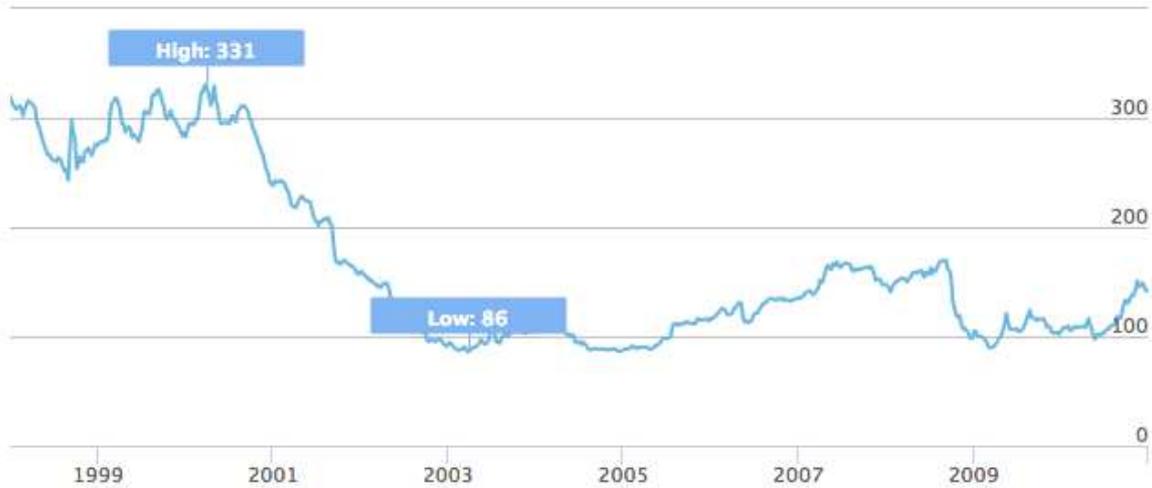
Indeed, we observe first of all a decrease in the *Dow Jones StoXX Football Index* - the market index of quoted European football clubs - after the stock market crash during the crisis of the dot.com bubble and the subprimes crisis (Figure 1). The drop was particularly strong and durable in the case of the first crisis, which is unsurprising given the size of the overall market crash during this crisis. For example, the price of Manchester United share dropped by 58% between March 2000 and March 2001. Similarly, the price of Juventus shares decreased by 33% between 2007 and 2008; the price of Roma shares dropped in the same proportion between 2008 and 2009.

² Small countries, like Greece are more affected than big countries. In addition, some indicators were already negative prior to the recession.

³ For instance, the Dow Jones Internet Index dropped by 93% and the Nasdaq dropped by 78% between spring 2000 and spring 2003 (Wang [2007]).

⁴ We can note for example the fall of the New York Stock Exchange and the London Stock Exchange by more than 40% between October 2007 and October 2008 (O'Hara [2009]).

Figure 1: Evolution of the DJ StoXX Index, January 1998-January 2011



Source: stoxx.com

Secondly, we note that many clubs left the market at the same time as the drop in share prices, especially after the dot.com bubble. Fewer than 10 English clubs were publicly listed in 2010 while they were nearly 25 quoted in 2000 (Drut [2011]). Moreover while almost 40 European football clubs were listed on the stock exchange in the early 2000s, today there remain only 22 listed clubs⁵. In the end, these numbers require that we moderate the effects of the share prices channel given that so few European clubs are publicly listed. Moreover, another assumption is relevant to explain this last observation: clubs abandoned the market as it became apparent that there was no point to them being on the market (Aglietta et al. [2008]).

Furthermore, we stressed that the credit crunch was an important factor in explaining the transition from financial crisis to economic crisis, more specifically in the case of the subprime crisis. So we wonder if this factor has impacted clubs similarly to many other companies. On the one hand, it is difficult to check the effect of the credit channel on the football clubs (Chor and Manova [2012]). Indeed, we do not have data to verify if it is more challenging for clubs to access loan finance. On the other hand, we assume that the increase in interest rates relevant to business (and households) purchase decisions, which arose as a consequence of the subprime crisis (Mishkin [2011]), has impacted indebted clubs. We talk about the interest rate channel (Karagiannis et al. [2010]). While it is still difficult to prove, we can quote the outstanding example of Liverpool. George Gillett and Tom Hicks purchased the club in 2007, through *Kop Football Holdings* (KFH). They used a *leveraged buyout* (LBO) and obtained a loan from the *Royal Bank of Scotland*. The debt of KFH was £282m in July 2007. Bordes and Brocard [2011] observe that the rise in interest rates in 2008 arising from the subprime crisis inevitably increased the cost of this borrowing. The interest on the debt increased to £38m, contributing to KFH reporting a £41m pre-tax loss in July 2008. The owners negotiated a deferment of payment and took out a new credit loan of £58.5m. Interest charges incurred in servicing the debt rose again by almost 13% to reach £42,9m in 2009. At the same time KFH announced a loss of £54,9m, and the owners took out a further new loan.

Lastly, we assume that European football clubs' finances were impacted by the depreciation of their currency during the subprime crisis (Melvin and Taylor [2009]). It is the exchange rate channel (Orlowski [2012]). This is the case for clubs in *Eurozone* countries and, above all, British clubs considering the strong depreciation of sterling at the end of 2008 (Melvin and Taylor [2009]). Indeed,

⁵ August 2016.

we note at the same time a devaluation of English clubs' income (Deloitte [2010]). For example, the *Premier League* turnover was over €2b during the 2008/09 season, but would have been over €3b at the June 2007 exchange rate, *i.e.* if *sterling* did not fall (Ineum Consulting [2009]). The devaluation is more significant for the major English clubs compared to other major European clubs (Deloitte [2011]). In that respect, transfer expenditure by English clubs decreased by 10% between the summer markets of 2008 (£500m) and 2009 (£450m), which may be partly due to *sterling*'s decline. For the same reason, English clubs gave priority to the domestic market in 2008/09, meaning that they recruited players from other English clubs (Deloitte [2010]).

3.2. *Specific transmission mechanisms: Club owners and public agencies*

In contemporary European professional football, the contributions of the club owners are crucial (Morrow [2016]). They are the so-called 'sugar daddies' (Franck and Lang [2014]). These agents were impacted by the consequences of both the dot.com and the subprime crises. First, the negative wealth effect was particularly strong for these actors because of their large financial assets. For example, the wealth of Chelsea owner Roman Abramovich reduced by approximately \$9b between 2008 and 2009⁶. Then, they have suffered in their own lines of business because of the global collapse in trade. Given this context, we might assume that some owners have reduced their financial contributions to their clubs. But it is complex to check this assumption due to the absence of reliable data. Hence, we can only cite an illustrative case. The former owner of West Ham, Bjorgolfur Gudmundsson, was impacted by the subprime crisis and more specifically by the collapse of the Icelandic bank Landsbanki in 2008. As a result, he sought a new buyer as of 2008 and he finally sold West Ham in 2010⁷.

Finally, another transmission channel defines the effects of the crisis on clubs' finance: the public authorities. Indeed, although public authorities no longer subsidise clubs directly, they provide indirect support to many European football clubs (Bastien [2014]). This relates to: (a) the provision, renovation and building of sporting facilities; (b) guarantees provided to trading partners; and (c) tax benefits. But public authorities were also affected by both periods of economic recessions studied (Lane [2012]). The decline in consumption has seriously reduced tax revenue collected by governments. Moreover during the subprime crisis several European states were forced to take on significant levels of debt, using this to rescue major financial organizations and to re-establish the country's economic health. This is why this crisis led to the European sovereign debt crisis. This assessment is similar for local authorities. Therefore, financial support for football is not a priority in times of austerity. The budget constraint of the public authorities has hardened, leading them to focus more on social expenditure.

Regarding the current economic recession, we point to two effects of the crisis on football clubs through the national public policy makers' channel.

First, the provision, refurbishment and building of sporting facilities are now better controlled. Examples are abundant. The new stadium of Valencia, the *Nou Mastella*, has been under construction since 2007. The partial withdrawal by the Valencia regional government and banks involved in the project explains the delay in its completion. In France, some local authorities (Strasbourg, Nancy and Metz) withdrew from hosting *UEFA Euro 2016* because the expenses necessary to refurbish the stadiums were too high in a deteriorating economic environment, while other local authorities (e.g. Nantes) refused to host the competition. The resident clubs were indirectly impacted because they were denied the opportunity to financially exploit more modern and functional stadiums and hence increase their incomes.

⁶ <http://www.dailymail.co.uk/sport/football/article-1146722/Abramovich-14billion--Chelsea-owner-hit-financial-crisis.html>, accessed April 16, 2017.

⁷ <http://www.elmundo.es/mundodinero/2008/10/10/economia/1223627858.html>, accessed March 23, 2017.

The second consequence is fiscal. We identify two effects. The first is that many public authorities are more diligent in claiming tax due. Fiscal constraints are restored because of the consequences of the crisis. Clubs must pay their tax arrears. This impact is important due to the level of clubs' tax debt. In the top divisions throughout Europe, the combined tax liability has been between €1.2b and €1.4b since 2008 (UEFA [2008-2014]). For example, Spanish clubs had a €752m tax debt in the 2011/12 season. Hence they have been particularly impacted when the government sought to recover outstanding liabilities (the Spanish provinces have been particularly hard hit by the recent crisis). As a result, the financial situation of many Spanish clubs has further deteriorated. The second effect is that the level of taxation on high earnings has increased in some countries as a result of the crisis. The outstanding example is taxation in France. First, the collective image rights (*Droit à l'Image Collective*) were removed in 2010. This device had allowed French clubs to be exempt from 30% payroll taxes on the players' wages. Furthermore, in 2013, French professional football – like other large companies – was affected by the so-called “75% tax”, a government response to the structural effects of the economic crisis. The former French President François Hollande said: “*The need to redress public accounts fully justified the efforts of companies that choose to pay annual compensation to such level*”⁸. This tax affects wages above one million euros per year. Its cost to clubs in Ligue 1 is estimated to be between €40m and €50m per year (Terrien et al. [2016]).

4. The impact of the financial crises on football demand

We stressed that the negative wealth effect and the credit crunch have had a serious impact on global trade, notably on the demand side. In that context, Claessens et al. [2012] highlight a business cycle channel to explain the effects of the crises on firms. We demonstrate in this section that European football clubs too were impacted by changes in demand during both the dot.com and subprime crises. In this specific case, we identify three transmission channels. While similar to many other companies, clubs sell their main product to households, *i.e.* a sporting show in a stadium, clubs also sell this sporting show to firms, *i.e.* TV companies. Lastly, they sell advertising spaces and time to other firms, *i.e.* the sponsors companies. We study the evolution of each type of demand and its effects on clubs.

4.1. What about the household football spending?

European households have been hit hard by both the dot.com and the subprime crises. In the last case, the deterioration of the economic and financial situation of European households has been particularly marked. Indeed, we observe a reduction in consumption growth due to: (a) a decrease in purchasing power growth; (b) an increase in precautionary savings arising from a sharp increase in unemployment. As a consequence, the household budget constraint hardened. At the same time, household debt rose contributing to a further wealth loss for the sector.

As per Hong et al. [2013] in the US case and Castellanos-Garcia et al. [2014] in the Spanish case, we assume that European households consumption patterns change during the economic recession. That is to say they gave priority to basic needs and some expenses become secondary or discretionary expenditure like recreation (*luxury goods*). This is the case for the sport expenditure. We identify two consequences of this channel on football clubs. The first is the decline of the stadium attendance. While empirical studies disagree about the nature of football demand⁹, Borland and Macdonald [2003] emphasise a widely accepted point that economic factors are an important determinant of the demand for football matches. They highlight spectator incomes and macroeconomic factors like the

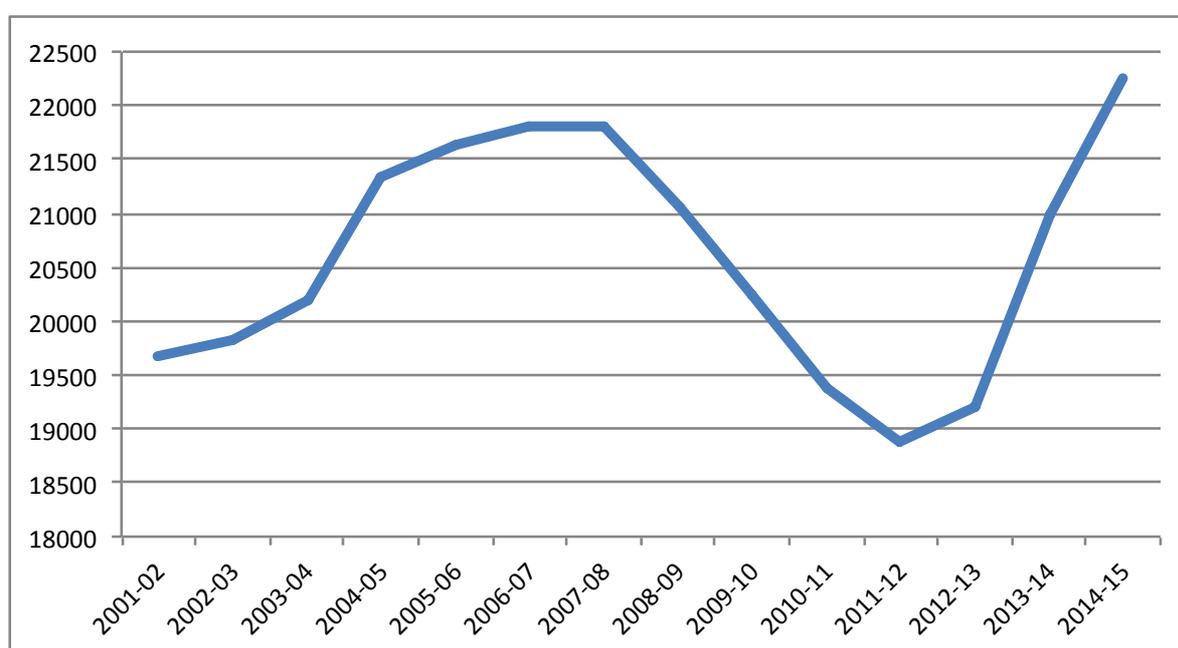
⁸ <http://www.leparisien.fr/sports/football/football-hollande-maintient-la-taxe-a-75-les-clubs-maintiennent-la-greve-31-10-2013-3275195.php>, accessed August 11, 2016.

⁹ For example, Bird [1982] and Falter and Pérignon [2000] show that football is an inferior good whereas Feehan and al. [2003] show that the *Premier League* is a normal good.

unemployment rate. In fact they show that income has a positive effect on attendance. On the contrary, unemployment generally has a negative effect on attendance.

Consistent with previous elements, we observe a decrease in European attendance after the subprime crisis (UEFA [2008-2014]). Attendance has declined in fewer than half of the European first divisions (44%) in 2007/08. In the following seasons, the percentage increased. Indeed, 58% of national leagues suffered from a decrease in attendance during the 2008/09 and 2009/10 seasons. Attendance decreased in more than half of leagues (55%) again in 2010/11. Then the situation improved: attendance decreased in fewer than half of the leagues in 2011/12 (39%) and in 2012/13 (21%). The Greek case is very significant. Between the 2008/09 and 2012/13 seasons, the average attendance declined by almost 40% (Barget and Brocard [2015]). Attendance decline was also noteworthy from the 2007/08 season in the French *Ligue 1* (Figure 2) where it fell by 13.5% between 2007/08 and 2011/12.

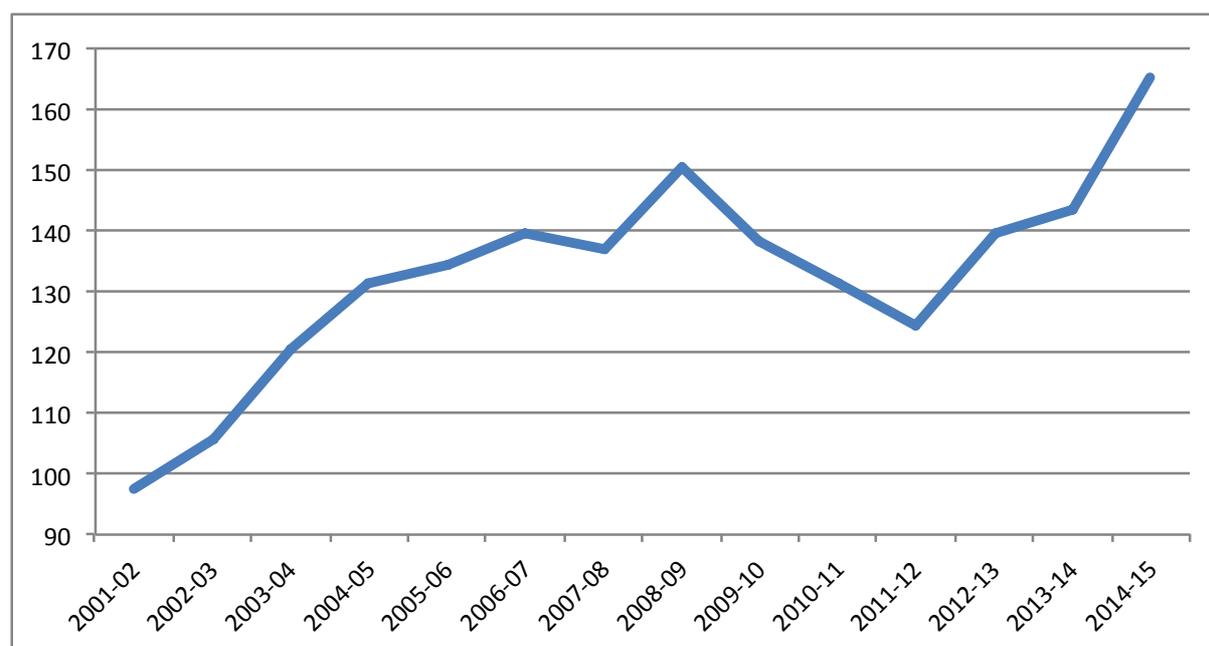
Figure 2: The evolution of attendance in the French *Ligue 1* (average per game)



Source: Financial management control body of French professional football
(*Direction Nationale du Contrôle de Gestion*)

Simultaneously, we note a decrease in gate receipts in French football from season 2008/09 (Figure 3). They fell by 17.3% between 2008/09 and 2011/12. This is due to attendance decline and an increase in the number of spectators that do not pay an admission fee as they receive invitations (Appendix 1).

Figure 3: The evolution of gate receipts in the French *Ligue 1* (in €m)



Source: Financial management control body of French professional football

(*Direction Nationale du Contrôle de Gestion*)

In our analysis, we have not taken into account ticket prices. Some studies have shown that the demand for football matches is not price elastic (e.g. Falter and Pérignon [2000], Falter et al. [2008], Peel and Thomas [1992]). Spectators take the total cost of the match into consideration, which includes for example the cost of transport, entertainment costs and food costs. Ordinarily they give priority to the game and reduce their consumption of complementary goods. In accordance with this, the sales of licensed products should have decreased, impacting on clubs' merchandising incomes. This is the second consequence of the impact through the household channel¹⁰.

4.2. What about the companies football spending?

As said before, companies in many sectors have been affected by these crises. Many firms have faced severe financial challenges due to the stock market crash, the credit crunch and the decline in demand. As a result, like any other economic agent, companies were constrained by the challenging economic situation. As a result many of them refocused on their core business. This situation can have an effect on football in two ways.

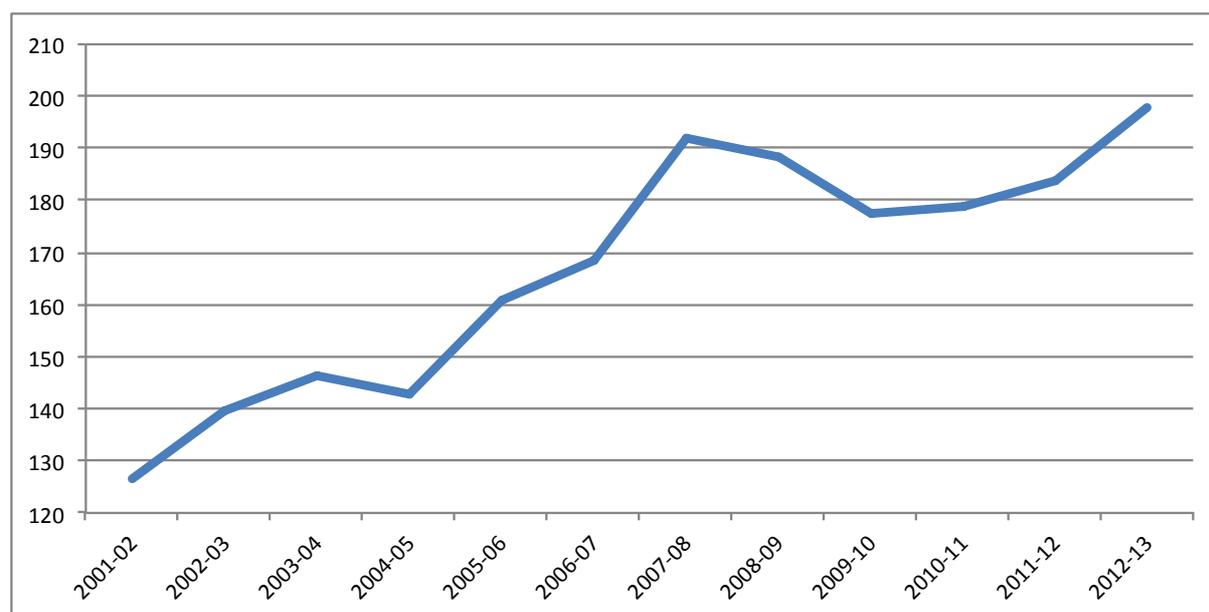
Firstly, some clubs' sponsors were affected by periods of recession, and more particularly by the last economic crisis. For example, in 2009 sales were down by 7% for *Nike*, 6% for *Adidas* and 3% for *Puma*. In that same year, *Nike* fired 1400 employees (Andreff [2012]). If some sponsors kept their contributions to clubs in periods of crisis, some others have chosen or were forced to reduce or even stop their contributions because the sponsoring expenditures become secondary (Andreff [2012]). For example, the British bank Northern Rock reduced its financial contribution to Newcastle United following its nationalization in 2008. The Belgium club of Anderlecht experienced a similar fate when the banks Fortis and Dexia were hit by the crisis. In the same way, West Ham was impacted after the collapse in September 2008 of its main sponsor, XL Leisure. After a four months gap the English club

¹⁰ However, we can legitimately ask whether the magnitude of the current recession has in fact challenged the inelastic nature of football demand, in particular for ordinary spectators.

signed a new partnership agreement with on-line betting company, *Sbobet*, but at a significantly lower value (€1,2m a year compared to €2,1m under the previous contract)¹¹. This last example shows that it was more difficult to find a sponsor after the crisis. In Italy, Lazio did not have a jersey sponsor for half of the 2008/09 season¹². It was the same for the French club of Boulogne at the beginning of the 2009/10 season. In the French *Ligue 1*, we note the effects of the subprime crisis as demonstrated by a 7.4% decrease in the revenues from sponsorship between seasons 2007/08 and 2009/10 (Figure 4).

¹¹ <https://www.theguardian.com/sport/2008/dec/17/creditchunch-football-cricket-rugbyunion-horseracing-olympics>, accessed August 5, 2016.

¹² <http://www.espn.com/espnmag/story?id=3905543>, accessed August 9, 2016.

Figure 4: The evolution of the sponsoring and advertising incomes in the French *Ligue 1* (in €m)

Source: Financial management control body of French professional football

(*Direction Nationale du Contrôle de Gestion*)

Secondly, football clubs' demand may decrease when media organisations are impacted by a crisis. The dot.com bubble has particularly affected TV companies. The fall in ICT values explains why several TV channels experienced difficulties during this crisis. But media companies were also in trouble during the subprime crisis. In fact some media companies that broadcast football competitions went bankrupt during these two periods of recession, meaning that they could no longer ensure the payment of broadcasting rights, which are essential in the budget of European clubs. In addition, we can assume that advertisers may be less inclined to pay in periods of recession, which affects TV channels. It is also important to stress that several TV companies were financially weakened due to overbidding to secure the rights to broadcast football events. Some examples are the collapse of *ITV Digital* in 2002 (Buraimo *et al.* [2006]) and the case of the Irish group *Setenta* that went bankrupt in 2009 in the UK with nearly €30m debt. In both cases, English professional football (and Scottish in the second case) was affected. In the same way, Greek football, Turkish football and Spanish football were impacted by the financial difficulties of *Nova TV* in 2010, *TeleOn* in 2001 and *Via Digital* in 2001 and 2002 respectively.

To conclude, it is interesting to note that some other media companies have reduced their rights offers for football broadcasting rights after the beginning of the subprime crisis, even although ostensibly they did not suffer losses as a result of it. Rather, they used the crisis as a pretext to decrease the fees (Andreff [2012]). For instance, the French channel *TF1* paid €10m less to broadcast the Champions League between 2010-12 than in the previous rights period. In Italy, the accumulated fees paid by *Sky Italia* and by *RAI* for this competition halved over the same period (Andreff [2012]). Nevertheless, the market entry of new media companies, like *beIN Sports* and *BT Sport*, has limited the deflationary movement. Table 1 summarises the nine transmission channels, along with their consequences for clubs.

Table 1: Summary of the nine transmission channels of financial crises on the football clubs

Nature of the impact	Transmission channel	Consequences for clubs
Fundraising	Share price	Drop in stock prices
		Delisting
	Interest rate	Rising of the debt burden
	Credit	Credit crunch
	Foreign exchange market	Lower incomes
		Increased purchasing price of foreign players
	Club owners	Reduction of the owners financial contributions
		Sale of the club
	Public authorities	Increased control of the provision, the renovation and the building of sporting facilities
Fiscal tightening		
Demand	Sponsor companies	Lower sponsoring incomes
	Households	Reduced attendance and gate receipts
		Decline in merchandising
	TV companies	Non-payment of part or all of the rights
		Decrease in TV rights

5. An empirical test of the transmission channel through households: attendance in French football

5.1. Methodology and data

In order to test the existence (or not) of a transmission channel in respect of the economic crises in football, the focus is on households. More precisely, we rely on attendance in French football over the period 1997-2013. This period covers the two economic crises described earlier. Our aim is to observe whether these crises had any impact on attendance in French football. To achieve this, a regression analysis explaining attendance will be used. We need to take the following aspects into consideration:

- to verify the impact of some economic factors – namely Gross Domestic Income per capita and the unemployment rate – so as to be sure that they have the expected effect on attendance and thus are able to interpret the differences between the seasons with and without crisis;
- to control for some other important factors; namely sporting performance, whether a club is the main team in its local area and team effect;
- and to test year effect so as to identify the impact of the two crises on attendance once the economic factors have been controlled. It is expected that there will be no impact for the year dummies as the effect of the crises should already be incorporated by the economic factors (unless another reason can be found to explain a significant impact of a year dummy, e.g. World Cup effect after 1998). Nevertheless, it may be the case that households allocate an increased percentage of their income for savings rather than consumption when a crisis occurs. As such, a year dummy related to crisis

may have a significant negative impact on attendance despite the effect of income and unemployment previously taken into account.

Population could have been added. However, Scelles et al. [2016] show that this variable has no effect on attendance when controlling for team effect.

Our model takes the following form:

$$ATT_{it} = \gamma_0 + \gamma_1 GDI_{it} + \gamma_2 UR_{it} + \gamma_3 SP_{it} + \gamma_4 MT_{it} + \text{team dummies} + \text{year dummies} + \eta_{it} \quad (1)$$

where ATT is the average attendance of the club, GDI the regional Gross Domestic Income per capita, UR the regional unemployment rate, SP the league rank and MT a dummy variable equal to 1 if the club is the main team in its regional area and 0 otherwise. The choice of regional data for GDI and UR is due to the unavailability of data at a lower level (departments being the level just below regions in France) for GDI over the period 1997-2013. We could have chosen departmental data for UR but this would have generated an inconsistency with GDI. Besides, it is likely that the main team within a region is able to attract fans from the whole region (and even beyond its borders). The incorporation of MT aims to capture the difference between the main team and other teams within a region.

Our sample is based on all available observations related to the first three French football tiers over the period 1997-2013 (n = 940; eight observations missing in 1997-1998, four in 1998-1999 and one in 2004-2005). Descriptive statistics are presented in Table 2.

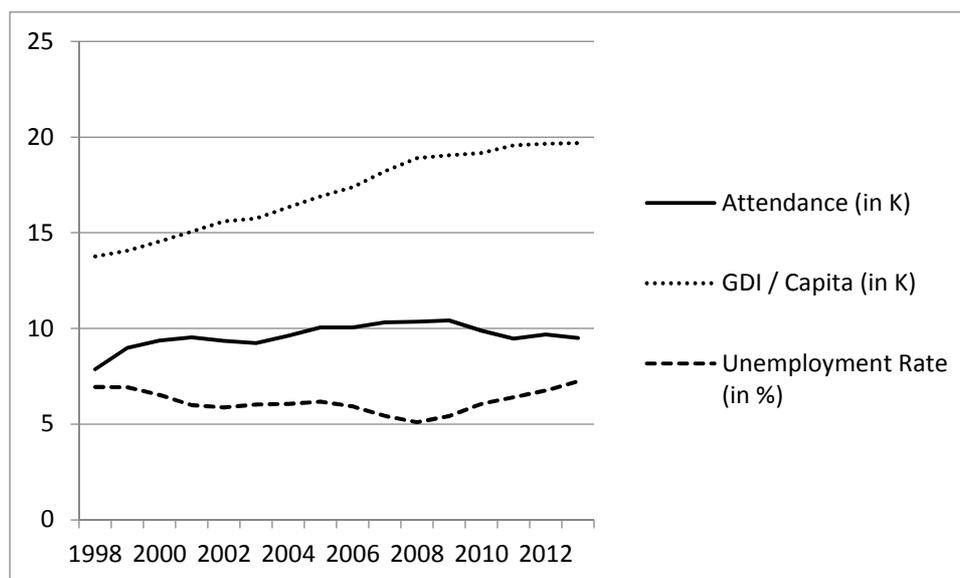
Table 2: Descriptive statistics

	Mean	SD
ATT	9627.62	10583.68
GDI	17167.18	2490.22
UR	6.18%	0.96%
SP	30.38	17.12
MT	0.88	0.32

The three main variables are attendance, Gross Domestic Income per capita and unemployment rate. Figure 5 provides their evolution over the period 1997-2013 while Table 3 gives the exact percentages for the annual evolution over this period¹³. The first crisis seems to have impacted the season 2002-2003 with an increase of only 1% for GDI per capita (instead of 2.2 to 3.6% in previous seasons) and an increase in unemployment rate (instead of a decrease in previous seasons). Attendance decreased that season consistent with the previous one. The second crisis appears to have impacted the period 2008-2013 with an annual increase in GDI per capita continually under 1% (except in 2010-2011) and

¹³ Percentages not to be confused with percent points for unemployment rates: if the rate moves from 10% to 11%, the evolution is 10% and 1 percent point.

an annual increase in unemployment rate always above 5% (and even as high as 11.7% in 2009-2010). Attendance decreased in 2009-2010, 2010-2011 and 2012-2013 but not in 2008-2009 (also its increase was only by 0.6%) and 2011-2012.

Figure 5: Attendance for French football clubs, GDI per capita and unemployment rate for the French economy over the period 1997-2013**Table 3:** Annual evolution of attendance, GDI per capita and unemployment rate for French football clubs over the period 1997-2013 (in percentage)

	Attendance	GDI / Capita	Unemployment Rate
1999	14.2%	2.2%	-0.2%
2000	4.4%	3.5%	-5.9%
2001	1.8%	3.6%	-8.1%
2002	-2.0%	3.4%	-1.9%
2003	-1.2%	1.0%	2.6%
2004	4.1%	3.7%	0.6%
2005	4.5%	3.4%	1.7%
2006	-0.03%	2.9%	-4.0%
2007	2.7%	4.8%	-8.4%
2008	0.2%	3.8%	-6.0%
2009	0.6%	0.8%	6.2%
2010	-5.0%	0.6%	11.7%
2011	-4.3%	2.0%	5.9%
2012	2.3%	0.5%	5.4%
2013	-1.9%	0.1%	7.1%

5.2. Results

Table 4 provides the results from four robust ordinary least square regressions conducted with STATA 13.0. These regressions were respectively run without year and team (Model 1), with year effect (Model 2), with team effect (Model 3) and with both year and team effects (Model 4).

Table 4: Results for attendance equation

	Model 1 Without effect	Model 2 Year effect	Model 3 Team effect	Model 4 Year and team effects
GDI	0.533*** (0.099)	1.530*** (0.243)	0.231*** (0.058)	-0.540 (0.503)
UR	68555.75*** (24724.16)	191174.4*** (35332.8)	-58871.25*** (19960.21)	-6831.00 (33039)
SP	-458.64*** (16.56)	-458.35*** (15.98)	-240.73*** (11.85)	-243.56*** (11.91)
MT	2754.95*** (409.40)	5086.66*** (746.20)	-1666.93 (1732.62)	-
1998	-	ref.	-	ref.
1999	-	1502.51 (1201.43)	-	1895.16*** (636.61)
2000	-	2714.94** (1270.07)	-	3270.64*** (761.91)
2001	-	2922.45** (1351.43)	-	3742.79*** (1031.05)
2002	-	2074.73 (1271.37)	-	3772.30*** (1250.86)
2003	-	913.32 (1265.86)	-	3745.26*** (1406.68)
2004	-	341.39 (1320.96)	-	4482.58*** (1600.43)
2005	-	-514.05 (1421.36)	-	5003.15*** (1842.30)
2006	-	-664.79	-	5417.29***

		(1446.99)		(2102.66)
2007	-	-626.20 (1524.30)	-	6099.81** (2503.86)
2008	-	-939.45 (1661.16)	-	6491.81** (2860.06)
2009	-	-1880.99 (1679.49)	-	6727.34** (2956.19)
2010	-	-3893.70** (1727.30)	-	6226.72** (2958.57)
2011	-	-5374.08*** (1803.21)	-	6150.35** (3079.98)
2012	-	-5933.31*** (1770.93)	-	6443.11** (3216.31)
2013	-	-7000.73*** (1878.53)	-	6330.53* (3542.44)
Constant	7753.05*** (2509.65)	-17928.42*** (5236.46)	13665.18*** (2766.36)	17212.64** (7079.49)
Teams when team effect	-	-	89	89
Observations	940			
R ²	0.591	0.617	0.949	0.951

*, ** and *** mean respectively significant at the 10, 5 and 1% levels. Robust standard errors in brackets.

In both Models 1 and 2, all four variables have a significant positive impact (a negative sign for SP means that being 1st is better than 2nd which is better than 3rd... meaning a positive impact of the ranking). The significant positive impact of the unemployment rate conforms to Falter and Pérignon [2000] and Scelles et al. [2013a, 2013b], while that of GDI per capita is contrary to these authors but consistent with our expectations. The main differences between their studies and ours is that they focus on: game attendance instead of annual average attendance, the first tier only instead of the first three tiers and a limited period (no more than three seasons) instead of 16 seasons. The last difference may explain the difference for GDI per capita, which is perhaps more likely to have a positive impact over the long run.

In Model 2, it is interesting to note that 2000 and 2001 have a significant positive impact compared to 1998, with a decrease in the coefficient (and the significance) for 2002 compared to 2001 which continues the following years. This may be associated with the first economic crisis. Nevertheless, we may have expected that the coefficient would stop decreasing from 2004 (increase in attendance and GDI per capita, only small increase for unemployment rate). The French national football team underperforming from 2002 to 2006 may be another explanation for the decrease in the coefficient of

the year dummies over this sub period. After an increase between 2006 and 2007, the coefficient of the year dummies continually decreases and becomes significant and negative from 2010. This is consistent with the idea of a negative impact of the second economic crisis going beyond a slower increase in GDI per capita and a strong increase in unemployment rate (households saving more money). Once again, we cannot reject the other interpretation of a negative impact of the French national football team underperforming from 2007 to 2013.

When controlling for team effect but not year effect (Model 3), being the main team in the regional area becomes insignificant. Interestingly, the impact of the unemployment rate is still significant but becomes negative. This may be interpreted as follows: (1) clubs in regions that suffer the most from unemployment are more likely to have high attendance due to football being a “*social outlet for unemployed persons*” (Borland and Macdonald [2003] p.481), this explaining the initial positive impact of unemployment; (2) however, once team effect is controlled, the impact of unemployment rate becomes negative because an increase in the latter negatively affects all clubs. In Model 4 where being the main team in the regional area is not included as it is not significant in Model 3, the impact of GDI per capita and unemployment rate becomes insignificant. By contrast, all year dummies have a significant positive impact compared to 1998. It is worth noting that Model 4 does not add very much compared to Model 3 in terms of explanatory power.

6. Conclusion

We have built the foundations of a methodology to analyze the financial crises’ effects on professional football - and even on professional sports in general - through transmission channels. We tested attendance as a specific characteristic of the household channel with French data. Our results confirm that the dot.com crisis and the subprime crisis have affected football clubs in Europe. Indeed, the household sector limited their football matches consumption due to the strengthening of their budget constraint. This is especially true for the subprime crisis: the slowing growth of the GDI per capita and the unemployment peak from 2008 has resulted in lower attendance. The decrease in attendance is lower and shorter for the dot.com bubble than the subprime crisis, possibly because the deterioration of the unemployment rate and the downturn in the increase of the GDI per capita are less important in the first case.

This work leaves many open research opportunities. Firstly, the test of each transmission channels needs to continue to understand all the effects of the financial crises on football. In addition, these tests could determine *in fine* which impact is the more significant: the impact on clubs’ fundraising or the impact on clubs’ demand. Secondly, a natural extension of this study is to measure a possible substitution effect: in periods of economic recession, the decline in attendance may generate a higher TV audience (if households favor a *gratis* or less expensive form of consumption). In respect of disequilibrium theory, there are “*spillover effects*” (Andreff [2015]) that show the connections between football markets. The imbalances are spread, or demand or supply is switched from one market to another. Lastly, we highlight a third opportunity: to discuss the relationship between the effects of external crises on football and the financial crisis of the European professional football which has been recognized by sport economists (Morrow [2016]).

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Appendix

Appendix 1: Type of attendance, Gate receipts and ratio Toll-free spectators/Total attendance in the French *Ligue 1*, from 2007/08 to 2014/15

<i>Ligue 1</i> - season	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015/16
Toll-free spectators (average per game)	3293	3177	3459	3879	3832	3677	3525	3371	2308
Total attendance (average per game)	21804	21050	20255	19382	18869	19210	20988	22245	20522
Gate receipts (€m)	128	134	122	120	119	123,5	136,5	158,2	152,2
Ratio Toll-free spectators / Total attendance (%)	15.10	15.09	17.08	20.01	20.31	19.14	16.80	15.15	11.25

Source: Own calculations based on data from the Financial management control body of French professional football (*Direction Nationale du Contrôle de Gestion*)