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Floating European football clubs in the stock market

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Abstract

Since the first initial public offering of a European football (soccer) club in 1983, more than forty other clubs have experienced a venture in the stock market. In this paper, it is investigated how much relevant and successful these experiences of listing and floating football clubs at the stock exchange have been. First, by showing that investing in the Dow Jones StoXX Football index is of little attractiveness in the perspective of an investor's efficient overall asset allocation. Then in examining the determinants of a football club's fair value and the relationship between stock performances and sporting results. Finally, an approach (alternative to the Anglo-American model of capitalism) of corporate governance, based on the concept of a soft budget constraint, is applied to European football clubs taking stake of their lasting financial deficits and debts. This alternative theoretical approach paves the way for an empirical testing of a vicious circle between negotiating higher TV rights revenues and player wage inflation.

JEL: G12, G30, G34, Z19

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1) Introduction

In 1983 Tottenham Hotspurs became the first football club in Europe to be floated in the stock market. Since then, dozens of European clubs, mostly English, also have experienced floating their shares. However, since the primary objective of a football club is sporting performance (win maximization) and not profit maximization, and since a number of floatation experiences appeared to be negative, the purpose of this paper is to investigate the relevance and interest of these initial public offerings (IPOs).

At first sight, the IPO advantages with regards to football clubs are unclear. Baur and McKeating (2009) have highlighted that sporting performances are not improved after an IPO. From a financial viewpoint, if the IPO aims at reinforcing a club's balance sheet, private equity by far seems to fit better in a sports industry suffering of poor corporate governance. Indeed, private equity funds target underperforming companies in order to restructure them and sell them with making a profit.[1] In such case, IPOs of restructured companies could be necessary to materialize capital gains and the question of the stock fair value matters.

Another advantage of being publicly traded for an entertainment activity is to draw the attention of institutional investors. From the demand side point of view, flotation enlarges diversification possibilities, mainly if the financial return of diversification is uncorrelated with traditional stock markets. Whether such hypothesis is relevant or not has to be verified by studying the returns on clubs' stocks in the secondary stock market. This is why we study how much an investment in the DJ StoXX Football Index is interesting in a standard process of portfolio allocation.

Since a company's financial performance is linked to its business model, the latter is examined here for professional football clubs. If the business performance relies too much on sporting results, there should be a high uncertainty about the fair value of a club's stock. A body of literature focuses on the efficiency of football clubs on the stock market. Renneboog and Van Brabant (2000), Palomino *et al.* (2009), Bell *et al.* (2009) namely find that football

[1] Besides, Manchester United which was the most performing club in terms of finance had been delisted from the stock market after it was taken over by Mr. Glazer.

clubs' stocks are strongly affected by sporting outcomes. Palomino *et al.* (2009) even show that investors in British football should use information from the betting market to implement short-term stock strategies because the bookmakers' odds are particularly accurate to predict the games' outcomes. Thus, our paper investigates whether the business model and the balance sheet of a European football club have an impact on the fair value of its stock.

Hall *et al.* (2003) strikingly notice that a listed club's wage bill is significantly higher in European football despite IPOs should have improved clubs' transparency and governance by transferring control to the shareholders. Thus, the football industry seems unable to curb wage inflation. Consequently, we attempt to determine how efficient the governance of European football clubs is.

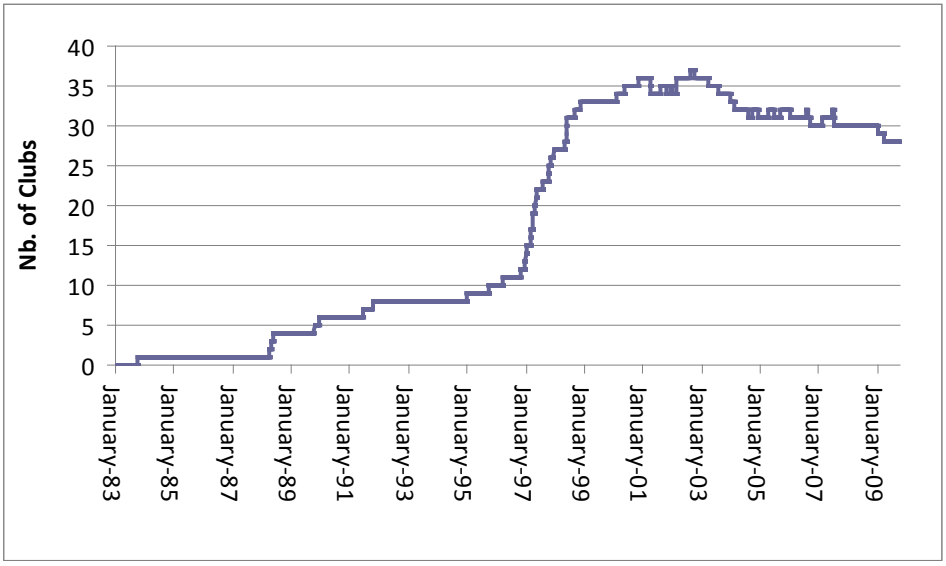
The purpose of our paper is to investigate whether it is actually relevant to float football clubs' shares in the stock market. First, it shows that there is little interest for institutional investors to invest their money in football stocks because of a relatively weak risk-return profile and low diversification possibilities. Then it exhibits that the financial value of a football club is highly related to its sporting results. The resulting instability of a club's value added to the high share of intangible assets in clubs' balance sheet generates a strong uncertainty on the club assets' fair value and, by the same token, on their stocks' fair value. Finally, the paper demonstrates that a major cause of IPOs' failures is the lack of an effective corporate governance at the club's level.

The paper is organized as follows. Section 2 reminds some stylized facts regarding publicly traded football clubs while Section 3 examines whether clubs may be attractive to professional or institutional investors. Section 4 investigates the roots for the uncertainty of football clubs' fair value. Section 5 studies the quality of clubs' governance. Section 6 concludes.

2) Football clubs in the stock market: an overview

A bit more than forty football clubs around Europe had ventured in the stock market since 1983. Some of them were de-listed since then. In Figure 1, the number of football clubs publicly traded over time is displayed (the full list of clubs is available in Appendix 1). It is striking that the majority of these IPOs occurred by the end of the 1990s, in times of financial euphoria. The peak in the number of publicly traded clubs was witnessed between 1999 and 2003. Then, a strong wave of de-listing took place, mainly in England (see Appendix 2).

Figure 1 Number of publicly traded football clubs in Europe
(January 1983-September 2009)



The best known index for publicly traded football clubs is the DJ StoXX Football Index[2] which composition is exhibited in Table 1. As of September 1st, 2010, the index was encompassing 23 football clubs. Contrary to a publicized myth, only still 4 clubs out of 23 are based in the United Kingdom. Other clubs are well scattered throughout Europe: 5 are Danish, 4 Turkish, 3 Italian, 3 Portuguese, 1 Dutch, 1 French, 1 German, and 1 Swedish. Notice that market capitalization is negligible: with a €72 million market capitalization, Galatasaray is the most important club in the index. This may explain a low attractiveness of the football stock market for institutional investors. The financial size of football clubs in the stock market is extremely small when compared to global capital markets. Indeed, as of September 1st, 2010,

[2] The Bloomberg Football Club Index focuses on English and Scottish football clubs.

the market value of the DJ StoXX Football Index represented only 0.035% of the DJ EurostoXX 50 market value. Since the creation of this DJ StoXX Football Index in 2002, this ratio never exceeded 0.06%.

Table 1 Composition of DJ StoXX Football (1st September 2010)

Country	Company	Weight (%)	Mcap (€million)	Float (%)	Division in 2010/2011	Involved in European League
Turkey	GALATASARAY	11.55	72.0	37.1	1st	
Italy	JUVENTUS	9.45	58.9	32.5	1st	Europa
Turkey	FENERBAHCE SPORTIF HIZMET	9.38	58.5	13.0	1st	
Germany	BORUSSIA DORTMUND	9.24	57.7	85.4	1st	Europa
Denmark	PARKEN SPORT & ENTERTAINMENT	8.80	54.9	84.4	1st	CL
Turkey	BESIKTAS	8.40	52.4	30.0	1st	Europa
France	OLYMPIQUE LYONNAIS	6.88	42.9	41.9	1st	CL
Italy	AS ROMA	6.50	40.5	32.9	1st	CL
Turkey	TRABZONSPOR SPORTIF YATIR	6.47	40.4	25.0	1st	
United Kingdom	TOTTENHAM HOTSPUR	4.10	25.6	23.5	1st	CL
United Kingdom	CELTIC	3.58	22.3	46.2	1st	
Netherlands	AFC AJAX	3.49	21.8	17.1	1st	CL
Denmark	BRONDBY IF B	2.89	18.1	100.0	1st	
Portugal	SPORT LISBOA E BENFICA	2.37	14.8	27.8	1st	CL
Denmark	ARHUS ELITE	2.00	12.5	59.7	1st	
Italy	LAZIO	1.13	7.1	33.3	1st	
United Kingdom	MILLWALL HLDG	1.03	6.4	46.5	2nd	
Denmark	SILKEBORG	0.88	5.5	56.4	1st	
Denmark	AALBORG BOLDSPILKLUB	0.53	3.3	74.9	1st	
Portugal	FUTEBOL CLUBE DO PORTO	0.51	3.2	20.9	1st	Europa
Portugal	SPORTING	0.30	1.8	8.4	1st	Europa
United Kingdom	WATFORD	0.28	1.7	54.1	2nd	
Sweden	AIK FOOTBALL	0.27	1.7	59.0	1st	

Source : StoXX Ltd. Note: "CL" means qualification for the round robin stage of the Champions League and "Europa" means qualification for the round robin stage of the Europa League.

Moreover, the sporting value of publicly traded clubs is heterogeneous. Even though almost all the floated teams are in a first national league, only 6 clubs have qualified for the round robin stage of the Champions League and 5 for the Europa League. Given that sporting success in European football contests is a precondition for financial success, this is not a good omen for the financial performances of most floated clubs. With regards to English clubs, 2 out of 3 clubs are strikingly not in the elite division. Here we observe the outcome of delisting trend among the best English teams during the 2000s (see also Appendix 2).

3) Assessment of football stocks from an institutional investors' point of view

For institutional investors, the DJ StoXX Football Index may be attractive only if financial returns are good enough compared to their volatility or if the index brings with it some diversification compared with traditional asset classes. Let us consider the typical case of an investor in stocks and bonds in Euros. Here we take into consideration the DJ Euro StoXX 50 as a common European stock index and the Merrill Lynch EMU Government index as a European government bond index. Data are respectively from Datastream and Bloomberg. Descriptive statistics[3] from January 1991 to September 2009 are available in Table 2 and the correlation matrix in Table 3.

Table 2 Descriptive Statistics of returns, January 1991-September 2009

	Stock Index	Bond Index	Football Index
Ann. Mean	7.80%	6.95%	3.66%
Ann Std. Dev.	19.09%	3.47%	23.89%
Skewness	-0.50	-0.13	0.59
Kurtosis	3.95	2.86	6.30
Maximum	14.69%	3.83%	32.85%
Minimum	-18.64%	-1.99%	-25.14%
Sharpe Ratio	0.20	0.86	-0.01

Source : Bloomberg, Datastream, authors' calculation.

Table 3 Correlation between returns, January 1991-September 2009

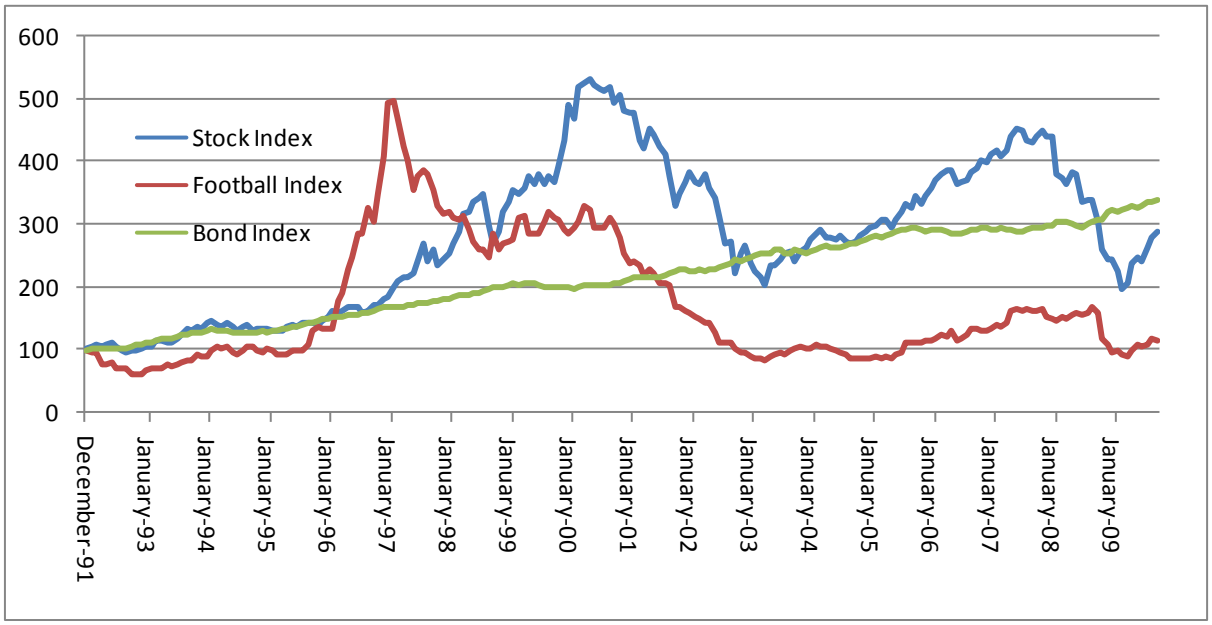
Source : Bloomberg, Datastream, authors' calculations.

First, one witness pretty bad returns with the DJ StoXX Football Index. The Sharpe ratio is even negative (-0.01) whereas it is positive for the common stock index (0.20) and the bond index (0.83). On the other hand, the average Football Index return is lower than the average return on other asset classes and the standard deviation is higher with the former than the latter. Returns on football shares look unstable: extreme risks as measured by the skewness, kurtosis and maximum monthly loss are markedly higher with the football index than with the other two asset classes. Besides, even though the football index is uncorrelated with the bond

[3] Even if the index was created in 2002, StoXX proposes historical daily data starting from 31/12/91.

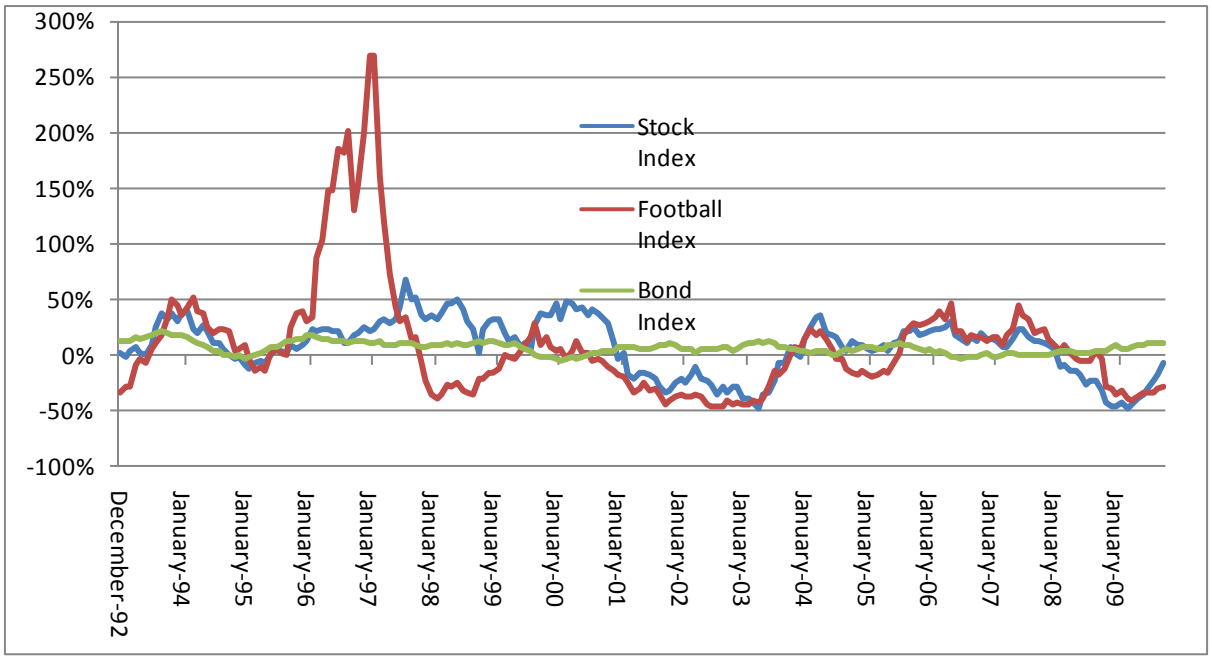
index, it is not very much uncorrelated with the stock index. Overall returns of the three indices are available in Figure 2 and the one-year rolling performance is shown in Figure 3.

Figure 2 Overall returns, comparison between the three indexes, January 1991-September 2009



Source : Bloomberg, Datastream.

Figure 3 One year rolling performance: comparing the three indexes, January 1991-September 2009



Source : Bloomberg, Datastream.

The football index systematically underperformed the common stock index between 1997 and 2005. It performed better in 2007 and 2008 and stepped back to underperforming in 2009. The main message delivered by Figure 3 is a strong correlation between the football index and the stock index since the beginning of the 2000s. One can notice a surge in the volatility of the football index - sometimes between two flat episodes -, as if the football clubs' fundamental value was not clear. To sum up, with regards to institutional investors, our findings can explain why they do not favour investing in publicly traded football clubs. Football stocks are not attractive when an 8% return per year is required from a number of other financial investments.

The erratic behaviour of the DJ StoXX Football Index may be rooted in various causes. Indeed, the overall turnover of football shares is very low and some stocks are not even traded during several weeks in a row. A low turnover can trigger dramatic consequences, positive or negative, on stock prices. Andreff *et al.* (2008) have shown that the share of free float stocks has diminished over time in England during the 2000s, which is all the more surprising that an opposite tendency is usually observed in any new industry. It must be stressed that an erratic behaviour of the football index can also derive from the uncertainty about what the fair value of football clubs actually is.

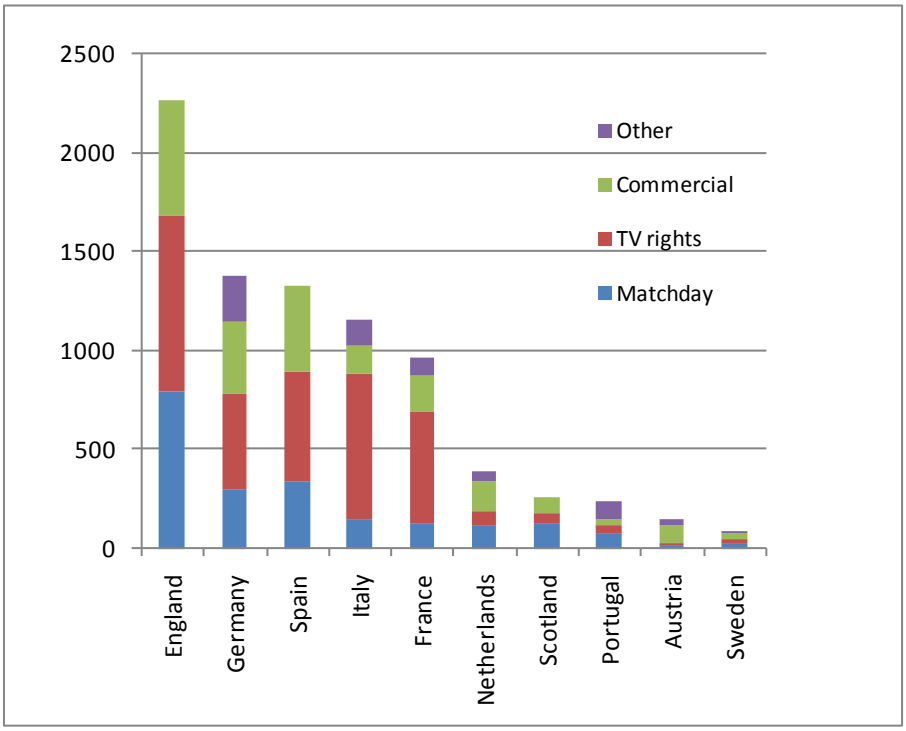
In the stock market, rational speculators should detect if a stock is under- or over-valued and their action should create those financial flows that would stabilize the stock price around its mean value. However, the club's value heavily depends on valuation criteria as much uncertain as the club's sporting results and/or possible gains and losses on the very irrational market for players' transfers (Kuper and Szymanski, 2009). Such dependence may introduce a radical uncertainty about the club's fair value and fundamentalist investors may not be able to stabilize the stock price. Instead of taking positions on the basis of the difference between the current and the fundamental value, investors will then take a position according to their perception of recent market behaviour. A model by Gennotte and Leland (1990) shows that multiple equilibriums can take place in this case and the stock price can be stuck in a lasting low equilibrium. This is why the drivers of a football club's fair value must be investigated now.

4) What about the fair value of a football club?

A/ **The club's business model**

Most professional football clubs concentrate all their economic activity exclusively on football. Their revenues mainly accrue from three sources: TV broadcasting rights, gate receipts and a commercial source (sponsorship and merchandising). Figure 4 exhibits that the distribution of leagues (clubs) revenues between the three major sources is different across the European leagues. On the club's expenditures side, the great bulk of the budget is devoted to salaries and players acquisitions (transfers).

Figure 4 Breakdown of revenue sources in major European leagues, 2008/2009, in million €.



Source: Deloitte (2010).

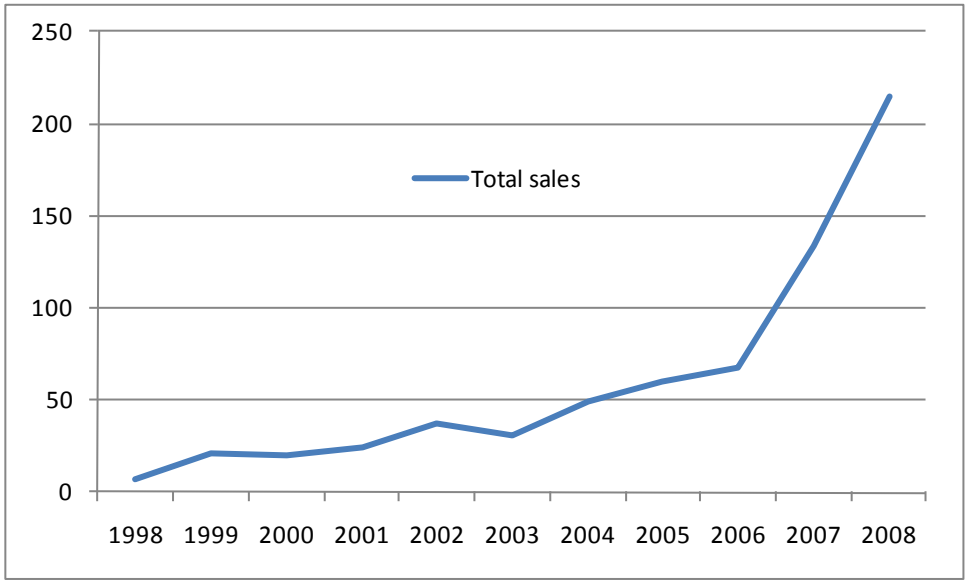
In a typical European football club, most revenues are directly linked to sporting results: a well-performing team is likely to attract a bigger attendance to its games, which will be more often exposed through TV broadcast, with subsequent higher TV broadcasting rights and this will attract more sponsors and trigger bigger sales of club-related commercial products. Besides, for those top clubs that qualify for the Champions League, they can earn additional money as a result of reaching the highest level in the European hierarchy of

football contests. Negotiating TV rights revenues in the deals with TV channels is also crucial for European football clubs, in particular in France and Italy where they account for around 60% of clubs' revenues. If, for any reason (injuries, bad tactics on the pitch, administrative sanctions, etc.), sporting results are to decline, it is very likely that the financial outcome will be declining as well while salaries are unlikely to drop that suddenly. Thus, both virtuous and vicious circles have a self-reinforcing character. Good (resp. bad) sporting results imply good (resp. bad) financial outcome with its consequences, that is an improvement (resp. a deterioration) of the players staff due to hiring (resp. selling) valuable players and rising (resp. lowering) players' salaries. The virtuous circle raises the probability of good sporting performances, then a good financial outcome and so on and so forth. It is exactly the opposite with the vicious circle. To sum up, for traditional football clubs, financial results are highly dependent on sporting results. Since a stock price is the sum of future discounted cash-flows, the stock of publicly traded clubs must also heavily depend on sporting results.

Some football clubs have decided to diversify their activities in order to diminish the sporting uncertainty which makes financial performances so much uncertain. The best example is the Danish club FC Copenhagen. This club was created in 1992 out of the merger between Kjøbenhavns Boldklub, the oldest non-English football club, and Boldklubben 1903. The merger was decided at the time of building a modern stadium named Parken[4] with 38,000 seats aiming at attracting a bigger fan attendance. The newly created club was listed on the Copenhagen Stock Exchange in 1997. Since the IPO, the club's strategy has been to diversify its economic activities so that financial results will less and less rely on football performances. Acquiring the Parken stadium was a major tool for such strategy. In 1999, the company's name has changed from Football Club Copenhagen A/S to Parken Sport & Entertainment A/S. In 2001, the club has expanded its business by acquiring Rockshow, the promoter of an annual Danish outdoor concert tour, and 15% of Euro Media A/S, a production company. In 2002, Parken Sport & Entertainment A/S has taken a 51% stake in e-billeter A/S, a company selling tickets for sporting and entertainment events throughout Denmark, and has taken over a professional handball team. In 2006, it has also bought Fitnessdk, a company involved in the fitness centers industry. Now football represents only a small share of the total Parken Sport & Entertainment A/S turnover (see the evolution of Parken Sport & Entertainment overall sales in Figure 5). A major consequence has been to stabilize the company's income.

[4] The Danish national team plays its games in this stadium.

Figure 5 Parken Sport & Entertainment overall sales, in € millions.



Source : Datastream.

One has to mention that Parken's diversification has not been detrimental to sporting results since FC Copenhagen has made it to win the Danish Superliga championship in the 1992/1993, 2000/2001, 2002/2003, 2003/2004, 2005/2006, 2006/2007 and 2008/2009 seasons.

B/ **The significance of sporting results**

A train of literature highlights the significance of sporting outcomes as a determinant of football clubs' share price fluctuations. While a majority of contributors focuses on English clubs listed in the stock market (Andreff *et al.*, 2008; Bell *et al.*, 2009; Palomino *et al.*, 2009; Renneboog and Vanbrabant, 2000), Duque and Ferreira (2005) have studied Portuguese clubs, Berument *et al.* (2009) Turkish clubs, Stadtmann (2006) Borussia Dortmund and Bernile and Lyandres (2009) different European clubs in general. All these studies tend to converge toward the conclusion that winning on the pitch triggers a significant rise of the club's stock value whereas draws and losses incur a significant drop.

Thus, no one would deny that sporting outcomes significantly impact the share price of football clubs: since their business model usually is exclusively focused on football, sporting outcomes determine upcoming financial results; since the stock's fair value is the sum of future discounted cash-flows, financial results in turn should theoretically impact the stock price. Gannon *et al.* (2006), studying the impact of announcing the winner of

broadcasting rights auction bids in England, have found a mixed reaction of clubs' stocks which is positive in 1996 but not in 2000, thus opening avenues for further research. Edmans *et al.* (2007) show that international football games impact national stock indexes through their effect on investors' mood. Bernile and Lyandres (2009) exhibit an impact on clubs' stocks due to return on assets significantly depending on sporting performances in European clubs. Moreover, Bell *et al.* (2009) and Palomino *et al.* (2009) underline that end-of-season games have a markedly higher impact than other games because the former are determinant of the final standing in national championships and cups, unveiling either each club's status next year (promotion, relegation, qualification for the Champions League, etc.) and the probable amount of its financial gains (gains from the Champions League for example).

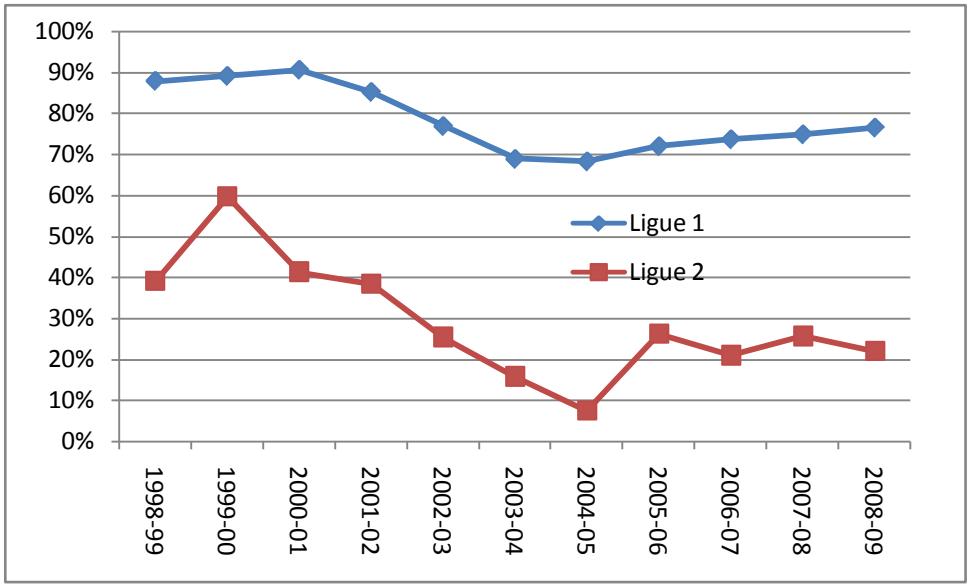
Such findings are particularly useful for active investment strategies through which an investor can use information provided by the bookmakers and take short-term positions, whatever short or long positions. However, it is a matter of fact that bookmakers produce fairly accurate betting odds that traders surprisingly do not use to build up their strategies in the stock market (Palomino *et al.* (2009).

C/ **A high share of intangible assets**

Since sporting results have a significant impact on the share price of publicly traded football clubs, this creates an uncertainty about the fair value of the stock. Another source of uncertainty derives from the balance sheet of football clubs. Indeed, intangible assets represent an important share of their total capital assets. Most of these intangible assets correspond to transfer fees paid by the club to recruit players. In other words, such assets roughly express the value of the club's human capital in accounting standards. Some other intangible assets matter to the club's fundamental evaluation, for instance the goodwill associated to the value of contracts with sponsors and other contracts using the club's image and brand. The problem is that the value of intangible assets is strongly endogeneous to sporting results. Repeated wins in the championship tend to raise players' value and the value of the contracts that the club can pretend to negotiate with sponsors and the media. To the contrary, bad sporting results such as being relegated to a lower division will depreciate the value of players' capital and future sponsoring contracts. Looking for instance at those French football clubs for which financial data are available, one notices that the share of intangible

assets in overall assets is regularly over two thirds in *Ligue 1* with a peak at 90 % in 2000/2001 (Figure 6).

Figure 6 Share of intangible assets in overall assets in French *Ligue 1* and *Ligue 2* (all clubs aggregated)



Source : Ligue Professionnelle de Football, authors' calculation.

The capacity of a football player to play at his highest level is fragile because an injury or a lower sporting efficiency is never definitely avoidable so that there is a high risk of depreciation of the club's intangible assets and consequently there is some uncertainty about the club's fundamental value. The biggest clubs intend to stabilise the fundamental value of their assets by assuring a regular qualification to the European football contests – such was the aim of an aborted project of a European closed league, parallel to the UEFA contests, launched in 1999. Another strategy for stabilising the fundamental value of a club's assets consists in activity diversification outside the football industry (like the aforementioned FC Copenhagen experiment) or in buying physical assets such as a stadium and/or a commercial centre. Few European clubs enjoy the ownership of their own stadium even though they are encouraged to do it. For example, a French law passed in 2006 has allowed football clubs to achieve an IPO[5]. The law explicitly recommends (or even preconditions) that an IPO should take place only if there is a project to use the proceeds to acquire real assets such as the

[5]« Loi pour le développement de la participation et de l'actionnariat salarié» voted the 11th October 2006

property rights over the sport facility or infrastructure used by the club. Such statement obviously aims at reinforcing the stability and durability of the clubs' capital endowment and reducing the share of intangible assets. On the other hand, the law provides an incentive to back the introduction of a club's shares in the stock market with the purchase of real assets, in particular the stadium in which the club plays its games. For instance, Olympique Lyonnais has designed the construction plan of a sporting and commercial infrastructure named OL Land which encompasses a new 60,000 seat stadium coupled with an important commercial center.

5) Initial public offering and governance in football clubs

In the Anglo-Saxon model of capitalism, IPOs are assumed to be virtuous because the managers of publicly traded companies should be submitted to market discipline. In case of poor management, managers are exposed to be fired by the current shareholders or after a take over. Financial markets discipline is regarded as the most powerful tool for promoting a good governance structure according to this model's supporters (Barros, 2006). Good governance must be a way to avoid a financial crisis in the football industry. However, arguing that football clubs governance can be improved by means of a stock market pressure is not verified in practice. In England, where the majority of floated football clubs were located, IPOs had been followed with better sporting results but also with deeper financial losses or lower profits (Hall *et al.*, 2003). The main reason is - even though the usual excuse for IPOs had been a stadium or a commercial centre building - that English clubs are used to spend the money raised at the stock exchange to recruit more or better players which derails into an increased wage inflation pressure. Hall *et al.* (2003) have shown that the wage bill is always significantly higher after an IPO. In the case of football, an IPO does not seem to improve the club's governance and management. Improving shareholders' control over club managers is still a remote dream in European football. Several clubs have been delisted after catastrophic stock performances (Nottingham Forest, Queens Park Rangers, Leicester City) while a few others have been delisted after a takeover by an investment funds or by an oligarchic billionaire (Manchester United by Malcom Glazer, Chelsea FC by Roman Abramovitch).

A/ **A soft budget constraint**

An alternative view is to consider that good governance is a precondition to successful IPOs. Good governance usually comes along with good management indicators, positive or balanced financial results but never with lasting deficits. The latter would entail the IPO failure and the stock price collapse. The problem is to create the conditions for good governance, attested by positive financial results, before the IPO. A decisive solution to this problem consists in strengthening the company's budget constraint. A soft budget constraint refers to a situation in which a firm can continuously spend more than its revenue for years (or for ever) without going bankrupt, as illustrated by Janos Kornaï with regards to former communist centrally-planned economies (Kornaï, 1980) where a failing firm was always bailed out and rescued with state finance. Kornaï *et al.* (2003) have extended the same theoretical analysis to a number of situations in capitalist market economies. It is precisely to a soft budget constraint that Lago *et al*. (2006) refer: "In some countries, local government stands ready to bail out failing clubs. The contribution by Ascari and Gagnepain makes clear that there is no chance that Real Madrid or FC Barcelona would ever be allowed to go bankrupt, whatever the financial problems of these big-spending clubs" (p. 8). Ascari and Gagnepain (2006) state that: "Clubs' owners know that Catalonian or Castillian banks will always cover important losses in FC Barcelona or Real Madrid, because these clubs are national institutions. In these cases, bankruptcy is simply not an option" (p. 77). Regarding the Italian case, Baroncelli and Lago (2006) state: "the popularity of the game may even lie behind possible slippage between authorities' tolerance of financial misconduct on the part of football clubs and 'ordinary' firms operating in other fields and businesses" (note 1, p. 27). Thus, the budget constraint of a football club can be softened by a local government, a (not too demanding) bank, authorities in charge of football and, sometimes, patrons and shareholders.

It is not surprising that the majority of national football leagues in Europe are considered to be in financial crisis[6]. For example, the Italian *Calcio* had a €982 million operating deficit accounting in 2001-2002 while its revenues amounted to €1148 million the same year. *Seria A*'s debt reached €1742 million in 2002. Even though this debt was diminished by a rescue plan from the Italian government, the deficit still accounted for € 414 million in 2003, and 13 clubs out of 18 were in the red, 3 had a balanced budget and 2 had a

[6] See special issues of Journal of Sports Economics, vol 7(1), 2006 and vol 8(6), 2007.

little excess balance[7]. The deficit reached a top of € 313 million for Lazio Roma, € 247 million for AC Milan and € 224 million for AS Roma. No surprise that the stock price of Lazio Roma and AS Roma fell sharply. Although low sporting performances imply a stock price fall (section 4 above), lasting clubs' deficit and debts due to weak governance issues are aggravating factors as well. Lazio Roma and AS Roma had certainly been publicly traded too early or, at least, not in accordance with their financial results. Once publicly traded, their weak governance has been sanctioned in the financial market but, contrary to the Anglo-American capitalism paradigm, without improving the club management discipline. The *Calcio* is an extreme case of financial crisis which ended up in so serious financial and sporting distortions (misdoings, referees bribery, corruption, etc., see Andreff, 2007a) that the beginning of the 2004/2005 season was postponed and several football clubs had to bear sporting sanctions such as the demotion of Juventus to *Seria B* in 2006.

The Spanish *Liga* usually exhibits a slight operating surplus each year thanks to the help of silent partners. Real Madrid succeeded in moping up a €300 million debt by persuading the municipal council and the autonomous community of Madrid to evaluate its Ciudad Deportivo ground upwards so that it could be sold for €480 million (Garcia and Rodriguez, 2006). The overall debt of Spanish football clubs accounted for €1,625 million in 2002 (compared to €1,257 million overall revenues) and grew continuously. However, the clubs have compensated for it with including more intangible assets, i.e. the value of their players' contracts, in their accounting (Garcia and Rodriguez, 2003). Not one Spanish football club is listed in the stock market which is a sign of caution or a managerial willingness to keep control over the clubs in a way that maintains a soft budget constraint with the help of banks and public authorities. In various other football leagues, in England, in Belgium, in Scotland, in Portugal, the financial crisis hits more small clubs[8] than big ones (Lago *et al.*, 2006), even though it does not definitely spare the latter[9]. The debt of English football leagues (four professional divisions) reached €1 billion in 2003 and 22 clubs went into administration between 1999 and 2004 (Buraimo *et al.*, 2006). With 5 clubs out of 18 being in the red in 2003 and an overall debt amounting to €550 million[10], the German *Bundesliga* is regarded as less affected by the crisis (Frick and Prinz, 2006). However, the Kirch group bankruptcy in

[7] Empoli's excess was € 9 million and Juventus FC's €2 million.
[8] Liquidation of KV Mechelen and SK Lommel. Financial rescue of the SC Charleroi by the Premier of Wallonie in Belgium.
[9] Leeds United, Celtic Glasgow, Glasgow Rangers, Benfica, FC Porto to quote a few.
[10] 42% of the debt was coming from only two clubs: Borussia Dortmund and Schalke 04. These two clubs securitised their debt in 2004.

2002 increased the financial troubles of German clubs since Kirch was the main funds supplier to the *Bundesliga* through its TV rights purchases (Frick, 2006). On the other hand, a quite strict control over clubs' expenditures in Germany restricted players' recruitment with a negative impact on sporting performances of German clubs, namely in European-level football contests.

More recently some of the biggest European clubs struggled to repay their debt. Table 4 displays Forbes financial data for 2009 that rank the 25 most valuable European clubs.

Table 4 Financial data for the 25 most valuable European clubs in the Forbes ranking 2009

Rank	Club	Country	Current Value (€mil)	Debt/Value Ratio (%)	One year value change (%)	Total Revenue (€mil)	Operating Income (€mil)
1	Manchester United	England	1191	54	4	326	102
2	Real Madrid	Spain	862	23	5	367	52
3	Arsenal	England	764	107	0	222	51
4	Bayern Munich	Germany	707	0	21	296	38
5	Liverpool	England	643	59	-4	211	32
6	AC Milan	Italy	631	0	24	210	37
7	Barcelona	Spain	611	7	22	310	69
8	Chelsea	England	510	92	5	270	-8
9	Juventus	Italy	382	5	18	168	29
10	Schalke 04	Germany	325	38	9	149	26
11	Tottenham Hotspur	England	283	29	8	145	45
12	Olympique Lyonnais	France	269	18	4	156	60
13	AS Roma	Italy	243	9	-12	176	44
14	Internazionale Milan	Italy	236	77	-8	173	17
15	Hamburg SV	Germany	210	0	13	129	28
16	Borussia Dortmund	Germany	207	33	1	117	6
17	Manchester City	England	197	0	62	104	-10
18	Werder Bremen	Germany	186	0	12	113	17
19	Newcastle United	England	182	96	-5	126	-8
20	VfB Stuttgart	Germany	168	0	NA	112	11
21	Aston Villa	England	153	10	26	96	1
21	Olympique Marseille	France	153	0	28	127	13
23	Celtic	Scotland	139	14	-4	92	7
24	Everton	England	132	49	5	96	9
25	Glasgow Rangers	Scotland	124	86	NA	82	10

Source: Forbes.com

However, some of the most important European clubs remain highly indebted, in particular the English *Big Four* clubs (Arsenal, Chelsea, Liverpool, and Manchester United) which debt ratios have skyrocketed. Chelsea's situation is somewhat different from the other ones because the money that the club owed to Roman Abramovich was converted into equity at the end of 2009, making it debt-free: this case is typical of an oligarchic billionaire's patronage. The surge of the global financial crisis initiated with Lehman Brothers bankruptcy raised

doubts about the sustainability of the football clubs' debt: the credit risk premiums have become higher and the uncertainty on future cash-flows has increased.

B/ **A vicious circle between wages and TV rights revenues**

All studies on European football show a strong correlation between wages and TV broadcasting rights revenues (Andreff, 2005; Bolotny, 2005). Such correlation is reinforced for those big clubs which regularly qualify for the Champions League (Andreff and Bourg, 2006). TV broadcasting rights strongly impact on clubs' overall revenues. An optimistic interpretation of the empirical evidence (Baroncelli and Lago, 2006) is to consider the following virtuous circle: with important revenues derived from TV rights, clubs are able to pay high players' wages in order to gather an efficient team which is the way to winning many games and getting higher revenues from these wins and resulting higher TV rights in the future. With this paradigm, expensive player transfers are justified because the TV industry is supposedly ready to pay (and the league and clubs budget constraints are soft). The problem is that, in many countries, TV channels do not agree any more to pay the same or higher amount for broadcasting rights than in the previous years. Moreover, Baroncelli and Lago (2006) find little evidence of this virtuous circle in their observation of Italian *Calcio*.

It is more likely that in softening the clubs' budget constraint, a big TV rights godsend provides an incentive to lax club management. Therefore a vicious rather than a virtuous circle would appear in which the professional league (in a monopolistic position on the market for TV rights) would negotiate the highest TV rights in order to finance a substantial wage inflation and the recruitment of superstar players. But such expenditures engaged by all clubs in the league cannot come out with the best sporting performance for all of them. Some qualify for the Champions League and the Europa League and benefit from the induced significant financial gains. On the other hand, most clubs cannot recoup their wage and recruitment expenditures with the revenues simply obtained from their national championship; therefore they end up the season in the red. Thus, at both the league and club levels such deficits call for a much needed negotiation of higher TV rights and so on and so forth.

In the following, we would like to statistically verify whether such vicious circle is relevant with testing whether "the higher the TV rights negotiated by the league, then the more lax wage policy in the clubs" in European football. If in econometric testing the strength and significance of the crucial relationship between wages and TV rights revenues is confirmed, then this.would provide solid grounds to our guess of a weak governance linked to a soft budget constraint in professional football clubs. Due to the paucity of data for other European football leagues we retain the French *Ligue 1* for which detailed accounting statistics are available. We dispose of 213 observations for *Ligue 1* and *Ligue 2* clubs from the 2002/2003 season to the 2007/2008 season.

Thus the assumption to be tested is that *the more a club is capable of obtaining increased TV rights revenues, the more lax it will be in its payroll management*, which generates a major governance issue. More precisely, we would like to test the econometric relationships between gross wages and TV rights revenues, but *TV*, the 'TV rights revenues' variable, is endogenous. Thus, our methodology is to use instrumental variables and two-stage least squares. First, we explain TV rights revenues using the following three variables:

. *POP1999* which stands for the club's market size as approximated by the population of the town where the club is based (1999 is the last available updated data);

. *DIST*, which stands for the distance that TV channels must cover in order to reach the club's stadium for broadcasting and which is approximated by transportation costs in the club's expenditures; and

. *NOT*, which stands for a notoriety variable and for which we use the ranking used by the French league to redistribute 20% of TV rights revenues according to media performance[11] .

The following model is tested using our 213 observation sample:

$$TV_{it} = k + a.POP_i + b.DIST_i + c.NOT_{it} + u_{it}$$

We control for the possible influence of each season, the division level (taking *Ligue* 1 as the reference category) and the different seasons in three other specifications. Results are available in Table 5.

[11] We intended to carry out a causality test to determine whether TV rights revenues determine wages (our assumed vicious circle) or whether the causality runs the other way round. Unfortunately, rather long time series are required for causality testing.

Table 5 OLS regression of TV rights revenues on instrumental variables

TV rights revenues	(I)		(II)		(III)		(IV)	
	Coefficient	P > |t|	Coefficient	P > |t|	Coefficient	P > |t|	Coefficient	P > |t|
POP 2005	0.003	0.03**	0.002	0.06*	0.003	0.03**	0.002	0.05**
DIST	9.73	0.00***	7.11	0.00***	9.34	0.00***	6.30	0.00***
NOT	-26.53	0.71	-138.45	0.03**	-73.29	0.31	-217.86	0.00***
LEAGUE			-7137.80	0.00***			-7816.28	0.00***
Year 2003-04					-1067.83	0.44	-703.34	0.54
Year 2004-05					-422.42	0.75	-118.31	0.92
Year 2005-06					2009.61	0.14	2832.70	0.01***
Year 2006-07					2527.31	0.07*	3751.95	0.00***
Year 2007-08					1684.71	0.23	3139.85	0.01***
Constant	-1323.90	0.23	7243.41	0.00***	-1235.42	0.35	7855.52	0.00***
R2	0.76		0.82		0.77		0.84	
F-stat	220.26		236.64		87.41		122.29	

*** Significant at a 1% threshold; ** at a 5% threshold; * at a 10% threshold.

We then study the relationship between gross wages *W* and the endogenous regressor *TV* where the latter has been predicted according to the models above. An instrument variable is weak when it is weakly correlated with the endogenous regressors. Staiger and Stock (1997) have shown that when instruments are weakly correlated with the endogenous regressors, conventional asymptotic results fail even if the sample is large. If the F-Statistic is below 10 when there is a single endogenous regressor, one potentially faces a weak instrument problem. Thus, we require F > 10 for our test to be relevant. In each of the four models, the relationship between the *TV* variable and the instrumental variables appears significant with F > 10 and p values (Prob > F) = 0.000 (Table 6).

Table 6 OLS regression of payroll on predicted TV rights revenues

Payroll	(I)		(II)		(III)		(IV)	
	Coefficient	P > |t|	Coefficient	P > |t|	Coefficient	P > |t|	Coefficient	P > |t|
Predicted TV	1.047	0.00***	1.101	0.00***	1.086	0.00***	1.175	0.00***
LEAGUE			1419.37	0.22			2415.21	0.04**
Year 2003-04					709.14	0.62	773.27	0.53
Year 2004-05					695.07	0.61	793.43	0.51
Year 2005-06					-1455.02	0.30	-1728.96	0.16
Year 2006-07					-4539.37	0.00***	-4934.97	0.00***
Year 2007-08					-2827.49	0.05**	-3220.82	0.01***
Constant	848.51	0.15	-566.08	0.66	1729.91	0.11	-470.50	0.75
R2	0.77		0.82		0.78		0.83	
F-stat	692.88		484.64		118.90		144.09	

*** Significant at a 1% threshold; ** at a 5% threshold; * at a 10% threshold.

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In all specifications, the link between TV rights revenues and payroll is significant. This confirms that TV rights revenues are determined by the three exogenous instruments and the league dummy variable. The major governance issue in European football is not only one of curbing wage inflation in order to maintain overall expenditures within the budget constraint fixed by overall revenues but also to *avoid using TV rights revenues as a means for softening the budget constraint*, an option that will not always be available insofar as TV channels will not permit TV rights to skyrocket for ever[12]. This is probably what Ascari and Gagnepain (2006, p. 79) mean when they contend that television is the possible source of new and larger deficits in Spanish football clubs accounts. This reference to the Spanish league is likely to apply to French football as well. Behind the financial godsend of TV is the monopolistic strategy of French football league: however, any possible decrease in league monopoly power would undermine the major pillar of French football finance. Without an improvement in football club governance, it seems highly unlikely that further football clubs' IPOs could succeed.

[12] A first warning emerged in 2008 when the French professional football league (LFP) had to organize a second auction round in negotiation with TV channels because the reserve price was not reached in a first auction round.

6) Conclusion

This paper has studied how much relevant the IPO drive has been for European football clubs. It appears, on the demand side, that there is little attractiveness for long-only institutional investors to invest in football clubs with a traditional bond/stock allocation approach. The analysis of the football stock index exhibits an erratic behavior, likely to be related to high uncertainty about the club's fair value, hence a weak risk-return profile and a low diversification potential. The club's business model and balance sheet are too much closely linked to sporting results in which the uncertainty about the club's fair value is deeply rooted. In addition, most clubs' assets are intangible in nature and volatile as regards to their value. A last and major hindrance to successful initial public offerings in football is the club's weak corporate governance derailing into bad management which is due, in theoretical terms, to a soft budget constraint. The latter is increasingly fuelled, as we have empirically tested it, by a vicious circle between negotiating always higher TV rights revenues with TV channels and player wage inflation.

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Appendix 1 All the European football clubs ever publicly traded

Club	League
Aalborg Boldspilklub	Denmark
Aberdeen	Scotland
AGF Kontraktfodbold	Denmark
AIK Football	Sweden
Ajax	Netherlands
Akademisk Boldklub	Denmark
Arsenal	England
AS roma	Italy
Aston Villa	England
Besiktas	Turkey
Birmingham City	England
Bolton Wanderers	England
Borussia Dortmund	Germany
Bradford City	England
Brondby	Denmark
Charlton Athletic	England
Chelsea Village	England
FC Istres	France
FC Kopenhagen	Denmark
FC Porto	Portugal
Fenerbahce	Turkey
Galatasaray	Turkey
Glasgow Celtics	Scotland
Glasgow Rangers	Scotland
Grasshoppers Zurich	Switzerland
Hearts of Midlothian	Scotland
Juventus	Italy
Lazio Roma	Italy
Leeds United	England
Leicester City	England
Manchester City	England
Manchester United	England
Millwall	England
Newcastle United	England
Nottingham Forrest	England
Olympique Lyonnais	France
Preston North End	England
Queen Parks Rangers	England
Sheffield United	England
Silkeborg	Denmark
Southampton	England
Sporting	Portugal
Sporting Lisboa	Portugal
Sunderland	England
Swansea City	England
Tottenham Hotspurs	England
Trabzonspor	Turkey
Watford	England
West Bromwich	England

Appendix 2 Number of publicly traded football clubs in the United Kingdom (January 1983-September 2009)