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Broadcasting Revenues and Media Value in European Football

Pedro Garcia-del-Barrio and Francesc Pujol

Abstract
Sport talent and popularity are major assets on which some businesses develop their economic activities. Professional football is one of the markets that, being among the principal industries of entertainment, depend on the skills of players. This paper uses media value ratings to appraise the sport talent and potential economic contribution of players and teams in European football. The empirical analysis shows also that sport performance and attainments are keystone elements to procure visibility in the media and to attract potential revenues.

The goal of this paper is twofold. Firstly, it investigates the factors that enhance exposure and media value of professional football clubs. The media value status and popularity are mainly driven by past and current sport performance. Besides, our media value indexes for teams and leagues, which are derived from individual appraisals, inform about their potential capacity to generate income. Secondly, the paper uses media value appraisals to address if they explain some sources of teams' revenues. The paper actually explores to what extent TV rights are in accordance to the share of interest that each club draws from the fans and the media. Among other results, we find a strong empirical relationship between media value scores and either total revenues or broadcasting revenues. The authors´ empirical analysis also indicates that the broadcasting revenues in some of the top European domestic leagues were in the past below the level that according to their media value status one might expect.

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1. Introduction

There are increasing numbers of businesses whose activity depends on intangible assets, which demands all possible effort to accurately evaluate them. Professional football is a paradigmatic example of this type of industries, where the sport talent of players, along with other of their personal skills, are major assets on which developing the business. Besides, given the economic implications of modern sports competitions, considering the media value status and popularity of players is mandatory if wanting to organize professional sports in a business-like manner.

On one hand, sports are often used for brand development and sponsorship, as some brands associate their image to the sport talent and achievements of athletes. (Brand building derives into broadcasting contracts, merchandising and other commercial revenues). On the other hand, the football industry has experienced a deep transformation due to technological progress. Actually, easy access to technologies and the role played by the mass media – TV broadcast, Internet, etc. – permit additional consumers to join the market while increasing the interest of fans and the general public. Actually, in recent times, technological progress and deregulation have brought along substantial increases of revenues in European football, mainly through large broadcasting contracts. The share of revenues derived from broadcasting TV rights has become the main source of earnings, especially for some very popular teams, even if this figure varies across teams and leagues.

Then, given its large and growing size, the football industry may be considered among the major providers of sport entertainment. According to the calculations made by Andrews and Harrington (2016), the worldwide revenues generated in the global sports sector are around US $80 billion a year, of which European football represents $33 billion. Also Deloitte (2015) reports calculations of total revenues for European football: The cumulative figure, in season 2013/14, goes beyond €20 billion; where the overall revenues of the "Big Five" domestic football leagues (England, France, Germany, Italy and Spain) totalled €11.3 billion.

The goal of this paper is twofold. Firstly, it evaluates, through media value rankings, the overall contribution (sport talent and potential ability to generate income) of professional teams in European football leagues. To this aim, we rely on the approach developed by MERIT: methodology for the evaluation and rating of intangible talent. With the help of new technologies we are able to examine millions of news and Internet web sites and to collect large databases. Secondly, the paper uses the media value appraisals for studying the extent to which the actual total revenues and broadcasting contracts are in accordance to the share of interest in the media that football clubs draw from the fans and the general public.

2. Description of the methodology

The methodology for the evaluation and rating of intangible talent (MERIT) permits capturing jointly the sport talent as well as other non-sport-related skills of sportsmen, and translate them into economic value (as captured by the interest of fans and the level of mass media exposure).

The basic guidelines of MERIT approach consist of analyzing the popularity and the media value. To measure the popularity of individuals or institutions we examine the share of attention that they draw from supporters and the general public, as captured by amount of Internet traffic. Similarly, the media value index (or score) tries to capture the mass media exposure of players or teams. To evaluate media value scores, we examine the number of news articles, in the main languages, that are associated to each individual at a given time period. Depending on the scope of the analysis, the records must be collected on a monthly or weekly basis. To explore the changes in media value over the course of a season, for instance, gathering records twice a week may be appropriate. Instead, if the aim is to obtain annual ratings, our usual procedure is computing monthly averages for the entire year.

Building upon these two notions, we calculate indexes for appraising the economic value of talent. It is important noticing that appraisals based on media value records are able to capture players' personal talents and attractiveness beyond the contribution that is directly linked to their sport performance. In fact, the degree of exposure in the media is meant to stem from the sport performance, but may also be related to the social recognition of personal skills.

To carrying out the current paper is study, we have collected and take into account over the years hundreds of thousands news articles (from media sources that publish contents into the Internet).

The MERIT index of media value is expressed with respect to the average of the reference group in our data set. The media value score is the factor by which the value of a particular player multiplies the number of news articles of the representative (average) individual in our sample. Then, the media value of football clubs or national teams can be derived by grouping the fifteen individuals with the greatest media value in the team. Similarly, aggregate figures for domestic leagues can be derived by adding up individual media values[1].One of the strengths of MERIT methodology is its capacity to deliver homogeneous indicators of media value in a wide variety of

[1] This methodology has been applied in the past to provide appraisals of media values ratings in professional sports in the context of Football (domestic leagues, UEFA Champions League, World Cup, etc.), Basketball (NBA, ACB and World Cup), Formula One, Golf, Tennis, etc. Some reports examine the impact of mega-events like the Olympic Games or the World Cup. See, for instance, a report studying the value of players who participated in the Football World Cup 2010: "Informe MERIT del Valor Mediático en el Fútbol Profesional (2011/12): Tasación mediática y económica de futbolistas, equipos y selecciones". Retrieved on May 10, 2014: http://www.uic.es/progs/obj.uic?id=51b739f849845.

sport competitions and entertainment industries. This feature permits to perform accurate comparisons between individuals today and over time.

3. General framework and review of the literature

There are two areas of the literature that may be worth visiting before we address the following sections. The first one concerns the topic of intangible assets and the customary difficulty associated to their evaluation. The second area focusses on sports economics and on the study of the professional football industry.

The task of evaluating intangibles has been a matter of concern on part of the academics. The literature explains that intangible assets are critical factors to generate revenues in a broad array of businesses (Cf.: Hall, 1992). Some papers recognise the high level of complexity that is usually associated to assessing and managing immaterial assets. (Cf.: Lev, 2006).

Given its immaterial nature, evaluating talent in sport industries is a difficult endeavour. To accomplish the task of translating sport talent contribution into economic terms, some papers apply sophisticated techniques. This is the case of Owen (2003), who approached the issue with contingent evaluation models, and who stresses that, to rightly understand limits of the amount of profits generated by clubs, one must go beyond the traditional sources of revenues (gate revenues and TV contracts). However, such an approach has the shortcoming of not always being something feasible to implement.

Encouraged by the results of previous studies, we advocate here adopting an alternative approach. There is previous empirical evidence supporting that the economic value of players and teams can be approximated to a significant extent by their media value status. (Cf.: Garcia-del-Barrio and Pujol (2007) and (2009), for the case of the football industry). The issue connects with a second group of research contributions, which is directly related to the study of the sports industry and, more specifically, to professional football.

In this regard, a first issue relates the debate on profit seeking behaviour in the football industry. Despite the huge revenue growth occurring in most of the domestic leagues, European football clubs do not typically accrue positive profits. To explain this evidence, Sloane (1971), Késenne (1996) and Késenne (2000) concluded that football clubs act typically as win maximizers rather than as profit maximizing agents. Also Garcia-del-Barrio and Szymanski (2009) provide evidence of win maximizing behaviour, subject to a zero profit constraint, in both the Spanish and English leagues. Besides, in the literature on European football there is a well-established relationship

between player spending (wage bill) and team success, and between team success and team revenues (Cf.: Szymanski and Smith (1997); and Forrest and Simmons (2002))[2].

Unfortunately, attempts to approximate the value of the players or teams' economic contribution to the business have usually been restricted to sport performance. (See, for instance, Scully (1974) or Berri (1999)). Furthermore, regarding the economic compensation in sport labour markets, Horowitz and Zappe (1998) express as generally acknowledged that player's rewards are based on sporting performance. Nonetheless, we argue here that to evaluate players' productivity, one should not only consider their sport performance, but also other skills they have that bring potential economic earnings to the clubs. Since the actual economic contribution (of players or teams) depends also on their status in the media, to have a comprehensive picture of the matter we must go beyond sports achievements alone.

In summary, we argue here that previous studies have generally failed to accurately evaluate the overall contribution of players, insofar as they neglect essential aspects of the business linked to media value status and recognition of the protagonists.

There are a number of other aspects of the football industry deserving some attention. First, this type of industry is characterized by the typical contest system, which draws attention from the fans through the uncertainty attached to the unpredictable outcomes of matches. (Cf.: Szymanski (2001) and Szymanski (2003)). However, there is still an open debate on this issue. Secondly, football is a paradigmatic winner-take-all market, in which high concentrations of rewards among small numbers of participants. This feature, extensively described by Frank and Cook (1995), is particularly relevant in the context of the media and broadcasting revenues. In these markets, in line with the idea proposed by Frank and Cook (1995), workers slightly better than others become winners in the market and receive much greater rewards than the losers. (Skew distribution of earnings stem from small differences in performance).

Rosen and Sanderson (2001) say that the winner-take-all phenomenon characterizes a broad range of work activities in the economy. Besides, their view elaborates upon sports markets experiencing a combination of cooperation and competition, which would be another variant of the arms race phenomenon.

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[2] The English case had been previously examined by Szymanski and Kuypers (2000) and even earlier by Szymanski and Smith (1997), who proved that few English teams averaged profits and that even in those cases the profits were certainly small. Ascari and Gagnepain (2006) discuss the different behaviour of sport professional clubs in the US as compared to Europe. They declare that European clubs may be thought as performance seekers of sport competition, rather than as profit maximizers. A few papers have helped to rightly understand how the football industry operates: Rotenberg (1956), Neale (1964) and Sloane (1971). For a general view of the football industry and its competitive structure, see: Hoehn and Szymanski (1999).

Typically, in industries such as professional sports, pop culture, arts, etc., many individuals compete for a few large prizes at the top, but only a limited number of them dominate the activities they engage in and obtain huge earnings, thereby reaching the status of "superstars". This type of situations can more easily prevail in the market under some circumstances: if there are exclusive productive factors, if the size of the market is enlarged by technological improvements, etc.

In the modern football, the scale of the industry allow for large prizes to be paid to the winners, either players or teams, whose capacity to produce spectacle draws attention of many fans and consumers. Noll (1974) and Rosen (1981) referred already to the phenomenon of superstars. More recently, Dobson and Goddard (2001) stressed that skewed earnings distributions may stem from the scarce supply of outstanding talent, along with the large audiences they attract. They also examined the transformation experienced by some clubs, which have become media-icons as well as modern sportive organizations. Garcia-del-Barrio and Pujol (2007 and 2009) shows that the winner-take-all element is at work in sports industries. Indeed, attending to the degree of concentration on the part of fans and the general public, a reduced number of teams absorb most of the attention in the media[3].

4. Data sources and characteristics

Firstly, our empirical analysis applies to a panel of 1,342 observations, for 122 clubs (including the main European clubs) and 10 seasons: from 1999/2000 to 2008/2009. The time period was delimited considering the data availability of some of the relevant variables. Even if the data set comprises revenues of 4 league categories, some of the models are estimated constrained to the 1st and 2nd division leagues: 670 and 317 observations respectively, since the sample for the other divisions was not sufficiently representative.

Before looking at the empirical results, and given the relevance of clubs' revenues for the purpose of this paper, Table 1 reports the aggregate values of total and broadcasting revenues, by leagues. This information is then illustrated by some figures graphs.

One important feature which stands out from the information of the table is the huge increase in revenues and broadcasting revenues over the considered period. This feature reflects, of course, the advent of new technologies and its consequence in the form of greater broadcast rights values stemming from increased competition in the broadcasting industry.

[3] In a previous writing, Rosen (1981) referred to the phenomenon of *superstars*, "wherein relatively small numbers of people earn enormous amounts of money and dominate the activities in which they engage".

Table 1. Total Revenues and Broadcasting Revenues - "Big Five" Domestic Leagues (Mill. Euros)

	England		**France**		**Germany**		**Italy**		**Spain**	
	Total Revenues	Broad-casting	Total Revenues	Broad-casting	Total Revenues	Broad-casting	Total Revenues	Broad-casting	Total Revenues	Broad-casting
1995/96	516	62	277		373		452		366	72
1996/97	692	145	293	95	444	111	551	199	524	
1997/98	867	225	323	137	513	143	650	241	569	
1998/99	998	290	393	164	577	168	714	248	612	
1999/00	1,151	357	607	343	681	212	1,059	596	683	341*
2000/01	1,397	537	644	326	880	399	1,151	619	676†	
2001/02	1,688	709	643	333	1,043	414	1,127	595	776	237*
2002/03	1,857	810	689	357	1,108	365	1,152	642	847	
2003/04	1,976	884	655	306	1,058	291	1,153	632	953	391
2004/05	1,975	856	696	344	1,236	321	1,219	666	1,029	409
2005/06	1,994	839	910	524	1,195	325	1,277	768	1,158	406
2006/07	2,273	880	972	565	1,379	480	1,064	648	1,326	557
2007/08	2,441	1,169	989	557	1,438	476	1,421	863	1,438	579
2008/09	2,326	1,134	1,048	576	1,575	489	1,494	892	1,501	621
2009/10	2,479	1,270	1,072	607	1,664	506	1,532	905	1,644	725
2010/11	2,515	1,305	1,040	607	1,746	519	1,553	938	1,718	772
2011/12	2,917	1,469	1,138	613	1,869	546	1,587	932	1,788	789
2012/13	2,946	1,390	1,297	632	2,018	620	1,682	993	1,859	900
2013/14	3,898	2,104	1,498	605	2,275	717	1,699	1,001	1,933	949

Sources: Deloitte Football Money League (1997-2014) and Deloitte Annual Report of Football Finance (2005-2015). Clubs' accounts provided by data bases: SABI, Aida, Amadeus and Hoovers. Additional data was provided by Andreff, marked with (*), and Angel Barajas. Finally, some records of Spanish teams, marked with (†), are authors' calculations from clubs accounts.

Then, in Table 2 we summarize the descriptive statistics of the main variables used in the empirical analysis of the last section.

Table 2. Descriptive Statistics of the Main variables

Variable	Number Observations	Standard deviation	Mean	Min	Max
mv_global	1220	1.42344	0.99985	0	9.98
domes2winAll	1342	0.26270	0.07456	0	1
domes5winAll	1342	0.30579	0.10439	0	1
revenues	1066	61.04210	55.83672	0	401.40
broadrev	471	33.53121	32.77285	0.44	172
points	1317	15.66192	58.53986	11	106
lrank	1284	1.35310	1.57573	-3.24	4.36
wages	1034	36.07857	35.36231	0	217.39
england	1342	0.48036	0.36057	0	1
spain	1342	0.45247	0.28652	0	1
italy	1342	0.37035	0.16393	0	1
germany	1342	0.31884	0.11475	0	1
france	1342	0.17814	0.03278	0	1
portugal	1342	0.12703	0.01639	0	1

Besides, Table 2 helps identifying the variables that are going to be used in the empirical analysis. In some cases, the name gives immediately the information on what the variable represents: "points" (in the domestic league), "wages" (team overall wage bill), "revenues" (total revenues of clubs), "broadrev" (broadcasting revenues), etc. Regarding the variable capturing sport performance, we use "lrank" (the log odds of league position), which in the literature is usually

preferred to "points"[4]. Then, to appraise the media value status of teams, we use the media value indexes, which are computed following the lines of the description made in Section 2. With the help of new technologies, we are able to identify millions of news articles and Internet contents associated to the protagonists.

In this paper, our media value index is expressed with respect to the average of the other 121 teams in the sample. Thus, the value given to each team indicates the number of times by which the media value of that particular team multiplies the rating of the average (representative) team in the sample. Due to the winner-take-all element, and controlling the teams with special status in the media, our variable capturing media value (denoted as "mv_global") enter into the model accompanied by two dummy variables. This feature is actually implemented in two levels: "domes2winAll", to account for the top two teams in the respective domestic league; and "domes5winAll", which takes value 1 for teams ranking 3 to 5 in terms of media value, and zero for any other team.

Finally, a number of country names denote qualitative variables for the corresponding domestic football leagues. Finally, the years are included to control for the usual changes affecting a particular season. (Apart from inflation, other peculiarities of the season may alter certain variables, a feature that must be taken into account).

5. European football industry and broadcasting revenues

One important feature of this type of industries consists of the way in which they create added value. The market of European football has been drastically transformed by the technological progress. Due to mass media development, worldwide consumers of football have gained easy access to the spectacle, which has enlarged tremendously the size of the market and the sources of revenues. As regards the composition of football teams' revenues, one must distinguish between three usual three sources: (i) match of the day; (ii) broadcasting rights and (iii) commercial revenues.

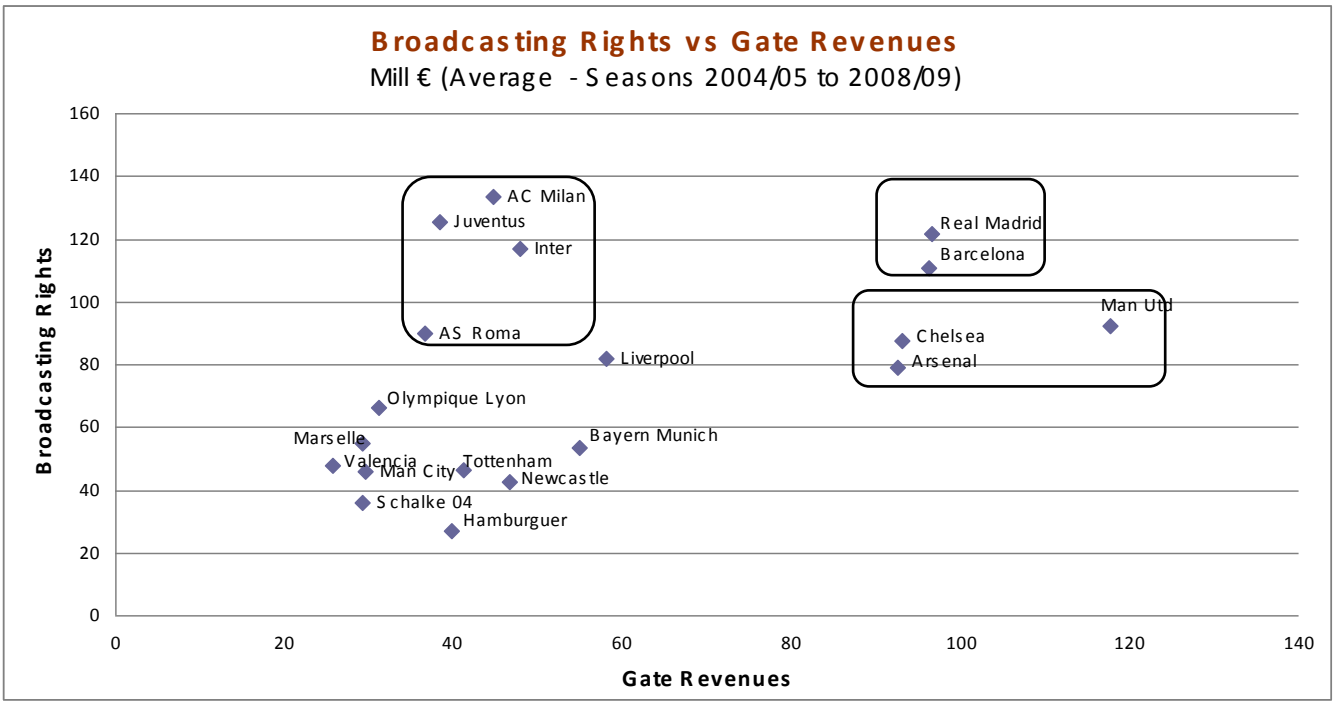
We next examine the relationship between revenue sharing, profits and the structure of leagues. Regarding the broadcasting rights, and following the description made by Andreff and Bourg (2006), there are two main models that have structured the relations between European football

[4] This is the usual procedure used, for instance, by Szymanski and Smith (1997) or Garcia-del-Barrio and Szymanski (2009). To calculate the log odds of league position (in each season), we treat position as a continuous variable by ranking positions in the second divisions as if they were a continuation of the top divisions. Accordingly, rank 21 is given to the first place in the Spanish second division, 22 to the second place and so on and so forth.

and the media: (i) individual clubs' ownership of TV rights and (ii) TV rights pooling by the league. The latter is based on income redistribution agreements, which largely characterise the first division league in France, England and Germany. (Always referring to the period considered in our sample). On the contrary, individual contracts were commonplace in other countries, like Spain and to some extent Italy.[5] The implications of choosing one or another alternative model are strongly relevant in terms of the amount of revenues and the sources from which they are generated.

The simple inspection of the figures discloses a contrasting picture across domestic football leagues in Europe. Figure 1 confronts broadcasting revenues against gate revenues (or also "match of the day" revenues), for the top 20 richest clubs worldwide.

Figure 1. Gate Revenues versus Broadcasting TV Revenues



Then, Figure 2 illustrates what is the share of income stemming from the three traditional revenue sources, for each of the "Big Five" domestic leagues. Finally, Figure 3 displays the results of the similar exercise, but when it is carried out at the individual level: it shows the revenue sharing for some top football clubs. The ways in which the teams are shown in the figure are grouped by leagues.

[5] For a survey of the economy of sports and the media, in earlier stages, see: Horowitz (1974). The debates on gate revenue sharing are many and far from being solved. A recent study on the arguments of the English Premier League for collective arrangements in selling television broadcast rights, in Cox (2012).

Figure 2. Sources of revenues: "Big Five" European Football Leagues

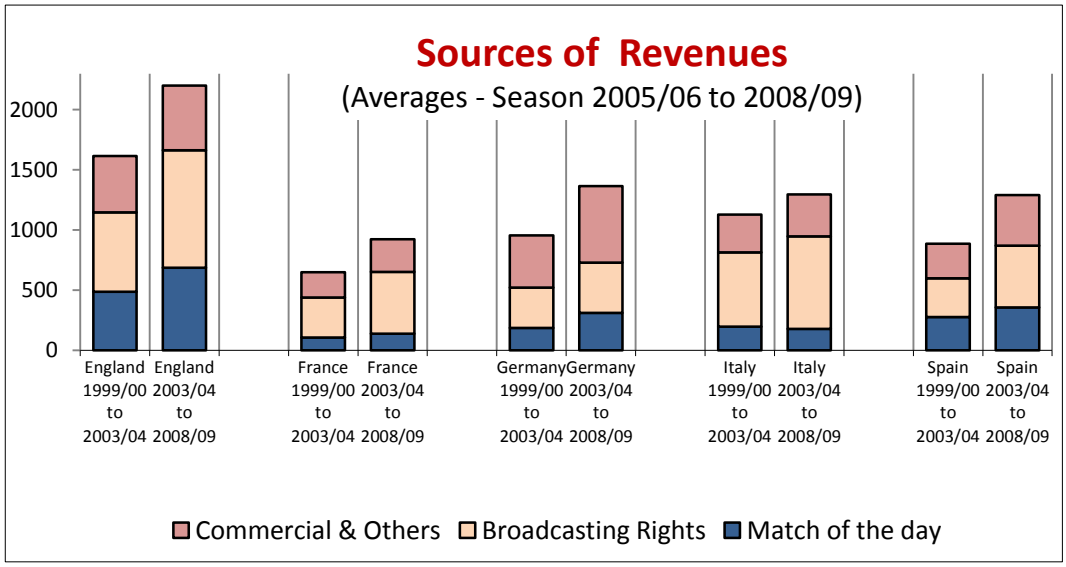
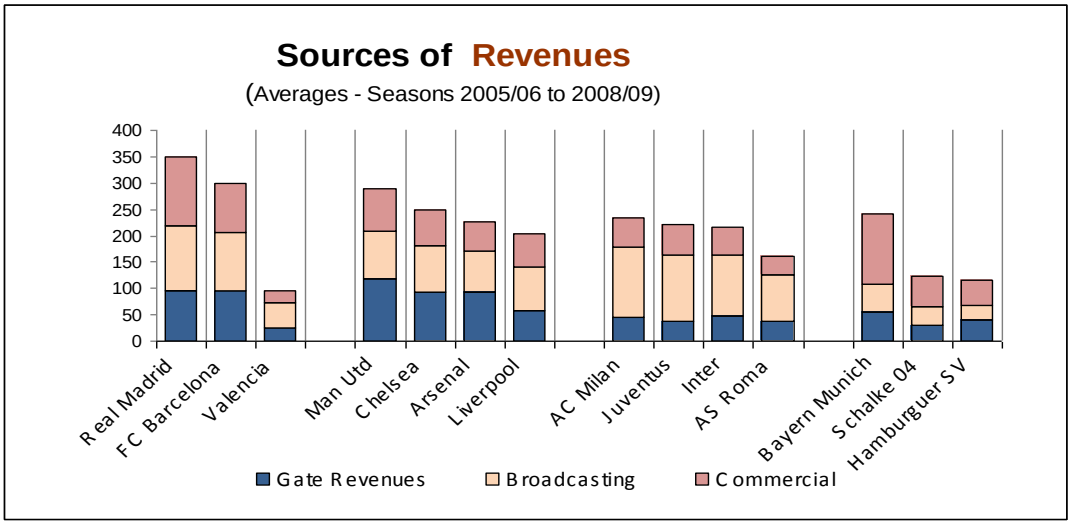


Figure 3. Sources of revenues: Top Football Clubs in Europe



From a business perspective, the arrangements of broadcasting contracts for some football clubs do not derive from the principles of economic efficiency. Even if there may be good reasons for defending alternative contracts (like the willingness to ensure greater competitive balance, for instance), it is advisable that the decision will be made upon the richest possible information. To this aim, our paper provides relevant information on the media value status of clubs and leagues, and leads to the conclusion that substantial economic gains could be achieved by improving the matching between broadcasting revenues and economic contribution of clubs.

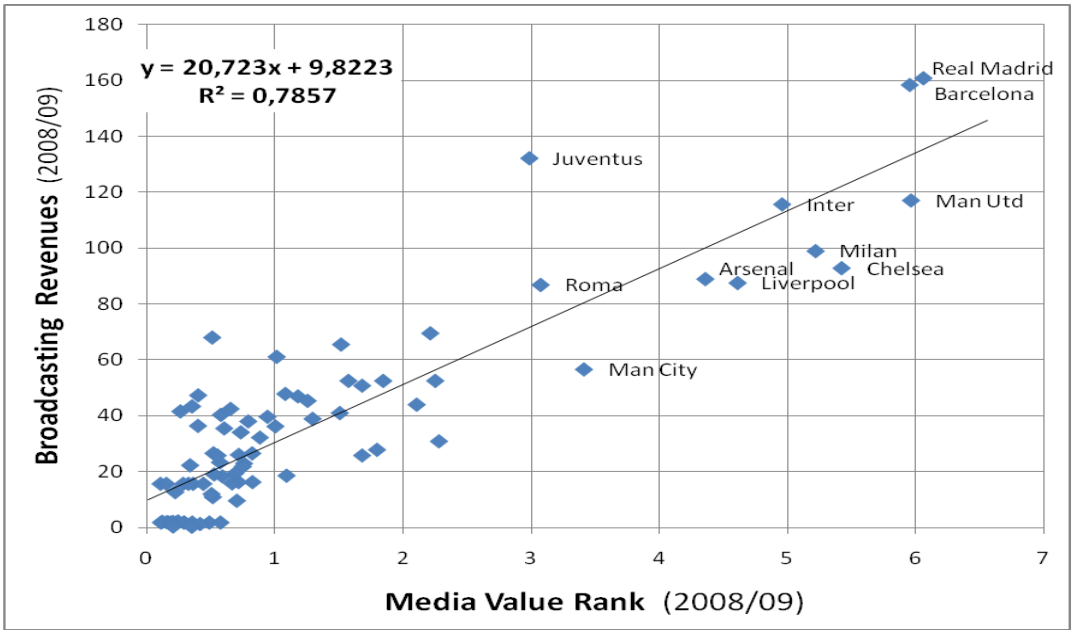
Besides, the media value approach also allows us examining other classical issues from a different perspective than the usual one. It is the case of the traditional debate on competitive and financial unbalance across football clubs (as well as its connection with the level of interest that the league draws from the fans and the media). Indeed, by exploiting the attractiveness of a contesting

competition system, and based upon the uncertainty of the outcome, football leagues draw attention from mass media and supporters. (Cf.: Szymanski (2001) and (2003). Other references on competitive balance, degree of interest and revenue sharing are: Késenne (2000); and Hoehn and Szymanski (1999)).

Most of the economic literature recognizes that uncertainty upon the outcome enlarges the interest of fans in sports competitions. However, it is also the case that people like watching games in which their teams win the opponent. Thus, if the share of supporters in the market is unbalance, it might result that a more unbalance talent distribution (in favour of teams with large numbers of fans) expands the degree of attention. At least, the overall satisfaction may not necessary experience a decline from a more unbalance allocation of quality across teams. Hence, the previous comments challenge the standard opinion that: "*competitive balance and uncertainty of outcome is essential… the collective selling of media rights has a fundamental role to play*". (Cf.: Deloitte & Touche, 2005: Foreword).

Perhaps the most relevant goal of this paper consists of looking at the relationship between media value and total and broadcasting revenues of individual football clubs. This is how the degree of economic rationality in the football industry can be examined, since, for the industry to be efficient, levels of broadcasting revenues should follow in line the corresponding media value status of teams. For illustrative purposes, Figure 4 conveys some results.

Figure 4. Broadcasting revenues versus Media Value



To properly verify the last issue, a number of regression analyses are then performed by applying cross sectional and panel data methodology. The media value status is potentially useful for

decision makers to be aware of the market share of interest in the media that corresponds to each team or league. Indeed, such information informs about the potential revenues (and even more broadcasting revenues) that clubs may be able to generate.

In summary, this media value approach may help calculating the economic compensation that clubs are entitled to claim from broadcasting companies, as it is indicated by their corresponding media value status. (Unless inefficient arrangements or unfair bargaining processes were to prevail in this industry). A mere inspection of the data indicates that broadcasting contracts in England have been very profitable, and that a number of Italian teams have largely benefited in a very large extent from generous broadcasting contracts.

6. Stylised facts related to revenues in European football

In this section, we use the information contained in our data set to learn about relevant facts affecting the football industry. In this regard, meaningful conclusions can be inferred from the information of Table 3.

Table 3. Total and Broadcasting Revenues by Football Division Category

Total revenues	N	sd	mean	min	max
1st Division	670	65.2766	79.8123	0	401.4
2nd Division	317	15.0638	17.4489	0	145.2
3rd Division	53	5.2841	7.2788	0.612	22.0
4th Division	23	2.6708	5.1703	0.264	10.5
Total	1064	61.0570	55.9350	0	401.4
TV revenues	**N**	**sd**	**mean**	**min**	**max**
1st division	319	33.42999	45.37197	0.4430	172
2nd division	139	10.71362	6.76415	0.5462	93
3rd division	10	0.41746	1.71608	1.3313	2.702
4th division	3	0.25686	1.65840	1.3618	1.806
Total	471	33.53121	32.77285	0.4430	172

First, notice the fact that average revenues in first divisions (79.8 Mill. €) multiply by 4.5 those accrued in second division leagues (17.4 Mill. €), which alerts us of the terrific financial consequences resulting from being relegated. Them, it is also worth noting the comparison between broadcasting revenues in the first and second division leagues. Concerning the broadcasting revenues, Table 3 also reveals that clubs in the first division leagues collected on average, during the period under consideration, an amount 7-fold greater than the revenues of teams in second division categories.

We next look at structural discrepancies (in terms of revenue sharing) across different domestic leagues, even if we do not yet examine the relationship this feature might have regarding the structure or other peculiarities of the competition. In this regard, the information in Table 4 is

informative of the poor TV revenues achieved in the Spanish league as compared to other domestic tournaments. This feature is even more relevant if taking into account the media value status of the domestic leagues. Anyway, the study of this issue is left for being properly addressed in the empirical analysis developed in Section 7.

Table 4. TV revenues in first division categories by leagues

League	N	sd	mean	min	max
England	123	22.295	47.035	1.3	117.1
Spain	67	38.677	36.092	0.5	160.8
Italy	89	44.040	52.164	0.4	172
Germany	21	15.074	40.309	16.3	69.6
France	10	14.050	59.720	34	75
Portugal	2	7.212	12.100	7	17.2
Others	7	7.679	22.785	11.3	34.5
Total	319	33.429	45.37197	0.443	172

Another revealing feature may be recognized from comparison of the standard deviations: the different schemes in revenue sharing, prevailing in each of the domestic leagues, determine the size of the interval in which the values of clubs' revenues oscillate.[6] Next, Table 5 and Table 6, briefly examine the issue of sport competitive balance or unbalance.

Table 5. Sport performance across domestic leagues (log odds of league position)

league	N	sd	mean	min	max
England	215	.8866732	2.166005	1.098612	4.369448
Spain	219	.8769047	2.133799	1.098612	4.369448
Italy	153	.8758778	2.405691	1.098612	4.369448
Germany	100	.7992829	2.501499	1.236763	4.369448
France	44	.9943694	2.998317	1.386294	4.369448
Portugal	22	.5929121	3.688442	2.512306	4.369448
Others	32	.5147224	3.90045	2.512306	4.369448
Total	785	.9626012	2.406496	1.098612	4.369448

Table 6. Sport performance across domestic leagues (points)

league	N	sd	mean	min	max
England	215	16.74156	53.26512	11	95
Spain	219	13.38714	52.3379	24	99
Italy	154	14.78838	53.77922	20	97
Germany	131	12.3943	51.45038	23	77
France	44	13.19844	62.18182	40	90
Portugal	22	8.331991	69.22727	52	86
Others	33	11.81013	81.66667	51	103
Total	818	15.6518	54.87775	11	103

[6] Hoehn and Szymanski (1999) examined the revenue sharing in European leagues to conclude that a major role is played by the economic aspects of football spectacle. Then, Scully (2004) remarks that large portion of player compensation could be considered as a share of league revenue. It seems actually clear that the player's exposure in the media greatly contributes to accrue income through merchandising related sales.

It is generally taken for granted that the more even or balance the sporting competition is, the greater the interest of the crowds and, consequently, the largest potential revenues accrued. Even if the second part of the sentence may be right, our empirical findings challenge that greater interest must be always associated to a more balance sporting contest.

Then, before we address the core sections of this paper, the regression analysis shown in Table 7 examines a keystone element of our research: studying what are the main sources that generate visibility in the media and popularity. Our estimated model applies FGLS regression to a cross-sectional time-series data set.

Table 7. Sources of Media Value in European Football

```
Panels:        heteroskedastic             Correlation:   panel-specific AR(1)

Estimated covariances      =       116          Number of obs      =       691
Estimated autocorrelations =       116          Number of groups   =       116
Estimated coefficients     =        27          Obs per group: min =         4
                                                               avg =  5.956897
                                                               max =         6
                                                Wald chi2(27)      =   3754.44
                                                Prob > chi2        =    0.0000
```

mv_global	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
lrank						
--.	.1658858	.011684	14.20	0.000	.1429855	.188786
L1.	.1291549	.0122059	10.58	0.000	.1052317	.1530781
L2.	.0210522	.0117306	1.79	0.073	-.0019393	.0440438
L3.	.0102844	.0106077	0.97	0.332	-.0105063	.031075
L4.	.0326192	.0100157	3.26	0.001	.0129888	.0522496
gamescl						
--.	.0718005	.0157953	4.55	0.000	.0408423	.1027586
L1.	.1307012	.0142518	9.17	0.000	.1027681	.1586342
L2.	.1138976	.0140212	8.12	0.000	.0864167	.1413786
L3.	.0876701	.0139294	6.29	0.000	.060369	.1149711
L4.	.0464633	.0131276	3.54	0.000	.0207338	.0721929
cl_1final	.6658379	.2125587	3.13	0.002	.2492305	1.082445
cl_2final	.7612426	.3433225	2.22	0.027	.0883429	1.434142
cl_4final	.6897846	.2165017	3.19	0.001	.2654491	1.11412
gameseurop						
--.	.0317657	.0090512	3.51	0.000	.0140257	.0495056
L1.	.0188897	.0074924	2.52	0.012	.0042049	.0335744
L2.	.0021361	.0073897	0.29	0.773	-.0123475	.0166198
L3.	-.0124551	.007152	-1.74	0.082	-.0264727	.0015625
L4.	-.0015653	.0064817	-0.24	0.809	-.0142693	.0111387
eu_1final	-.2847191	.3132954	-0.91	0.363	-.8987669	.3293287
eu_2final	.0694568	.1028228	0.68	0.499	-.1320722	.2709857
eu_4final	.0602612	.1316849	0.46	0.647	-.1978365	.3183589
england	.5593349	.0410179	13.64	0.000	.4789413	.6397286
spain	.0397207	.0282038	1.41	0.159	-.0155577	.094999
italy	.0873528	.0372596	2.34	0.019	.0143253	.1603804
germany	-.7346422	.0769798	-9.54	0.000	-.8855198	-.5837646
france	-1.022585	.2215164	-4.62	0.000	-1.456749	-.5884208
portugal	-2.641942	.2335264	-11.31	0.000	-3.099645	-2.184238

Considering the statistical significance of the estimated coefficients, we can conclude that: (i) the media value status depends on sporting successes achieved in past seasons, both in the domestic

and European competitions; (ii) the estimated coefficient is decreasing, so that the current season and previous one are about 6 or 8 times more relevant (to generate media exposure) than seasons lagged two or more than two years; (iii) playing in the UEFA Champions League is far more important than in the Europa League. Moreover, in the case of former league, the process described in the precedent point lasts longer time: the impact increases significantly if the team has reached the quarter, semi or the final match (and this feature occurs at an increasing rate).

7. Regression analysis: total and broadcasting revenue models

Finally, in this section we examine the empirical relationship between teams' media value status and the total and TV revenues that they realize. According to economic rationality, for the football industry to operate in an efficient manner, we expect teams (and leagues) that generate greater levels of interest than the others to be able of accruing larger amounts of income as well. To test this hypothesis, we initially examine the extent to which the empirical relationship between media value scores and total revenues holds.

Table 8 summarises the results of various regression models that use total revenues as dependent variable. The estimated coefficient of the media value index (our main explanatory variable: mv_global), and its corresponding z-*stat*, clearly indicates that total revenues are largely in line with the share of interest that each football club draws from the fans and the media. This conclusion is robust to having estimated various models applied to different sub-samples: separate estimations for each of the three main domestic leagues; and estimations for the sub-sample of team playing in the first division category. Besides, given the significance level of both "domest2winall" and "domest5winall", it is also clear that the winner-take-all phenomenon strongly affects this industry.

The estimations also incorporate three other variables to directly capture sport performance: the main one is lrank (the log of the odds of league position), which also performs very well to explain the capacity of teams to generate positive economic outcomes. The two other regressors are qualitative variables, to account for the number of games played that season in the UEFA Champions league (gamescl) and the similar figure as concerns the Europa league (gameseurop). It is worth noticing that the former variable has stronger explanatory power than the latter regarding teams' overall capacity to generate revenues.

Next, we examine the differences associated to each of the football leagues. Notice first that one of the Top competitions (namely, the Spanish league) is in need of greater levels of media value than the other leagues for this visibility to be transformed in income. This conclusion emerges from the size of the estimated coefficient of mv_global, which is larger in the Spain model as

compared to the two other leagues. The same conclusions seems to be obtained from inspection of the coefficients associated to Spain in the two pooled models (columns 1 and 2), since they are negative and statistically non-significant.

Table 8. Total revenues and media value in European Football

	Pooled FGLS	**First Division**	**England**	**Spain**	**Italy**
	Coefficient (z-stat)	Coefficient (z-stat)	Coefficient (z-stat)	Coefficient (z-stat)	Coefficient (z-stat)
mv_global	13.8474 *** (18.82)	10.4701 *** (14.17)	7.9482 *** (8.36)	24.0585 *** (14.87)	14.1939 *** (5.15)
domest2winall	21.0867 *** (7.13)	30.1072 *** (9.10)	-1.8212 (-0.20)	78.6994 *** (3.21)	47.9335 *** (4.20)
domest5winall	10.8810 *** (5.29)	14.8608 *** (7.17)	6.9427 * (1.86)	-0.0890 (-0.04)	50.1636 *** (8.08)
lrank	8.3635 *** (18.91)	8.9685 *** (14.53)	12.8050 *** (16.03)	3.8810 *** (8.05)	9.4675 *** (9.52)
gamescl	6.3902 *** (15.40)	6.4861 *** (16.64)	10.8280 *** (8.25)	3.8605 *** (7.35)	8.5315 *** (7.46)
gameseurop	0.9577 *** (4.77)	1.0343 *** (4.54)	2.8545 *** (4.82)	0.1584 (0.65)	0.2971 (0.45)
Year_2000	-8.6112 (-1.20)	-9.9249 * (-1.79)	4.2251 ** (2.17)	0.1204 (0.14)	4.0159 * (1.91)
Year_200	-4.0251 (-0.56)	0.1691 (0.03)	11.3289 *** (6.11)	1.4148 * (1.82)	4.2029 ** (2.27)
Year_2002	-1.4285 (-0.20)	1.8652 (0.33)	17.7105 *** (9.62)	0.6760 (0.83)	2.5037 (1.21)
Year_2003	-0.9647 (-0.14)	3.1811 (0.56)	17.1548 *** (9.38)	1.4527 (1.63)	3.5715 ** (1.98)
Year_2004	0.7685 (0.11)	4.3164 (0.77)	22.5664 *** (12.31)	1.5917 * (1.69)	5.0570 *** (2.71)
Year_2005	1.4708 (0.21)	7.5585 (1.36)	22.8723 *** (12.31)	0.5247 (0.54)	5.4594 *** (2.68)
Year_2006	2.6353 (0.37)	9.3736 * (1.68)	25.5999 *** (14.42)	-2.0197 * (-1.75)	2.7503 (1.30)
Year_2007	7.0564 (1.00)	17.4834 *** (3.13)	28.1228 *** (15.16)	0.8658 (0.71)	9.4040 *** (4.18)
Year_2008	9.5019 (1.34)	23.1182 *** (4.15)	29.4847 *** (15.39)	5.1082 *** (3.51)	15.6475 *** (6.49)
Year_2009	12.3537 * (1.73)	22.6603 *** (4.04)	30.5428 *** (14.44)	6.5315 *** (3.63)	16.8720 *** (6.41)
England	16.6102 ** (2.37)	20.9555 *** (4.02)			
Spain	-1.1481 (-0.16)	-5.3533 (-1.04)			
Italy	19.4205 *** (2.68)	23.4512 *** (4.23)			
Germany	29.4588 *** (4.02)	22.8577 *** (4.14)			
France	30.4919 *** (2.87)	21.8537 *** (2.73)			
Portugal	-0.8858 (-0.09)	-8.4511 (-0.88)			
Number observ.	1031	632	420	283	1 domest2win~l 84
Number groups	118	95	44	34	20
Wald chi2	7002.31	18782.40	3590.98	2474.52	3812.20
Prob > chi2	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]

FGLS regression. Correlation: panel-specific. AR(1) Panels: heteroskedastic.

Finally, Table 9 focus on the just the revenues associated to broadcasting rights. The new estimations are useful to understand the peculiarities associated to specific sources of clubs' revenues. It investigates to what extent TV rights are in accordance to the share of interest that the clubs draw from fans and the mass media, even if further research on this issue must be done in the future.

Table 9. Broadcasting revenues and media value in European Football

	Pooled FGLS	**First Division**	**England**	**Spain**	**Italy**
	Coefficient (z-stat)	Coefficient (z-stat)	Coefficient (z-stat)	Coefficient (z-stat)	Coefficient (z-stat)
mv_global	8.1149 *** (12.73)	5.8663 *** (8.14)	8.8890 *** (13.03)	9.1559 *** (3.14)	15.0614 *** (7.57)
domest2winall	8.6229 *** (2.98)	11.3798 *** (3.67)	-8.4424 *** (-2.87)	37.1320 *** (2.61)	11.6961 (1.44)
domest5winall	2.8094 * (1.66)	2.8645 * (1.69)	-1.3314 (-0.79)	1.1010 (0.31)	21.2812 *** (6.00)
lrank	5.5201 *** (10.29)	3.1197 *** (5.96)	7.6363 *** (11.81)	2.4844 (1.36)	2.9570 *** (3.24)
gamescl	2.9839 *** (7.39)	3.3723 *** (8.43)	1.9904 *** (5.56)	0.6583 (0.87)	6.2305 *** (5.22)
gameseurop	-0.1041 (-0.47)	-0.0318 (-0.16)	0.2462 (0.86)	-0.6824 (-1.33)	1.4958 *** (3.15)
Year_2003	-35.0828 *** (-10.26)	-19.7861 *** (-5.14)	-9.3409 *** (-4.08)	-14.6121 (-1.58)	-31.1667 *** (-3.89)
Year_2004	-26.9514 *** (-10.71)	-16.4989 *** (-5.44)	-0.0460 (-0.05)	-2.9054 (-0.83)	1.0713 (0.15)
Year_2005	-28.0419 *** (-10.86)	-16.4818 *** (-5.71)	-1.4576 (-1.52)	0.8699 (0.25)	1.9282 (0.98)
Year_2006	-26.1581 *** (-10.17)	-12.9766 *** (-4.41)	1.8943 ** (2.18)	-0.8369 (-0.19)	0.5724 (0.31)
Year_2007	-24.1652 *** (-9.24)	-10.3195 *** (-3.47)	3.7465 *** (4.12)	5.1702 (1.23)	2.0625 (1.08)
Year_2008	-19.1946 *** (-7.23)	-4.1987 (-1.50)	10.4025 *** (11.13)	3.2778 (0.73)	7.1456 *** (3.50)
Year_2009	-17.9720 *** (-6.45)	-3.2518 (-1.12)	12.7170 *** (10.65)	8.9517 ** (2.25)	5.2973 ** (2.41)
England	28.1093 *** (11.37)	31.4182 *** (13.61)			
Spain	19.1450 *** (8.49)	13.1066 *** (5.09)			
Italy	33.1408 *** (13.07)	30.6348 *** (12.63)			
Germany	32.0635 *** (8.88)	23.7080 *** (6.17)			
France	41.9028 *** (11.10)	33.6760 *** (7.23)			
Numb. observ.	449	292	250	59	109
Number groups	83	61	44	11	20
Wald chi2	4519.52	5671.05	10628.24	478.64	1788.50
Prob > chi2	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]

FGLS regression. Correlation: panel-specific. AR(1) Panels: heteroskedastic.

Inspection of Table 9 gives a provisional answer to the main purpose of this paper: determining the extent to which broadcasting contracts are in accordance to the share of interest that the clubs

draw from fans and the mass media. First, we find strong empirical evidence between media value status and clubs revenues. Secondly, the empirical analysis indicates that the broadcasting revenues in some of the top domestic leagues were in the past below the level that according to their media value status one should expect.

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