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## Media value methodology in global sport industries: football versus Formula One

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**Abstract:** This paper evaluates intangible talent in two global industries of sports: European professional football and Formula One. We apply the methodology for the evaluation and rating of intangible talent (MERIT) approach to evaluate – through media value ratings – sport talent and economic contribution of Formula One drivers and football players. Individual media value appraisals jointly capture the infield and outfield skills of athletes. By aggregating individual ratings, we are able to rank in terms of media value football clubs and racing teams; and to establish a hierarchy among sporting competitions. The empirical analysis is made on large databases from worldwide media sources and internet sites. The paper gives insights on managerial issues, as it permits predicting the future career development and economic perspectives of sportsmen. It also applies regression techniques to examine behavioural inter-industries differences concerning the relationship between sport performance, media visibility and economic revenues.

**Keywords:** media value; sport performance; sponsorship; global sport industries.

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**Biographical notes:** Pedro Garcia-del-Barrio is a Senior Lecturer of Economics (Profesor Agregado) in the School of Economics and Social Sciences at UIC Barcelona. He completed his MSc in Economics (University of Southampton, 2000) and was awarded PhD with distinction (Universidad de Navarra, 2002). His teaching experience includes Introduction to Economics, Macroeconomics, Microeconomics, Labour Economics and Sports Economics. The main areas of his research are in the field of labour, industrial and sports economics. His papers were published in assorted journals: *Economic Modelling*, *Applied Economics*, *Managerial and Decision Economics*, *Journal of Sports Economics*, *Journal of Economics*, *Intangible Capital*, *Journal of Productivity Analysis*, *Review of Industrial Organization*, etc. He is the Academic Director of MERIT social value, part of an academic project with applications in the field of sport management. He has authored more than 30 reports on media value in sport and a number of consulting projects sponsored by professional sports entities.

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## 1 Introduction

Modern professional sports industries are driven to a large extent by economic aspects. They are often linked to the media exposure of individuals and teams. If we want to organise sports competitions in a business-like manner, the economic aspects related to media exposure should not be neglected. Moreover, inasmuch as brands often associate their image to sport talent and to the achievements of players, our approach based on media value may help decision making in brand development, sponsorships, commercial campaigns, etc.

This paper evaluates intangible talent in two very relevant global industries of sports: European football and Formula One<sup>1</sup>. For this purpose, we measure – through media value ratings – the recognition of sport talent and the economic contribution of Formula One drivers and football players. In addition to individual rankings (in Formula One and football) this paper explores other interesting analyses, such as: the rank of teams, the hierarchy of domestic leagues, and a disaggregated analysis by countries.

Our empirical analysis is developed using large databases from worldwide media sources and content from internet websites. The guidelines of methodology for the evaluation and rating of intangible talent (MERIT) approach are based upon the appraisal of popularity (share of interest that the general public pays to the protagonists, as captured through the amount of content on the internet), and media value scores (exposure in the media, as captured by the number of news articles related to an individual or team). Two aspects that are actually determined by the level of sport performance, social status and personal characteristics.

On the bases of this methodology, which is fully described in the third section, we further explore managerial issues. For instance, we are able to perform a comparative appraisal of economic status and future career perspectives of Formula One drivers and of football players.

In the final part of this paper, we apply regression analysis techniques to determine if substantial differences exist between Formula One and football industries, concerning the relationship of sport performance with media visibility and economic revenues.

## 2 Sport industries characteristics and literature review

Formula One and European football are industries characterised by similar features. Firstly, they both draw attention from fans due to the uncertainty attached to the unpredictable outcomes of their competitions. Unpredictable outcomes are typically related to the degree of competitive balance, a debate initially addressed by Neale (1964) that provoked a large number of recent papers.<sup>2</sup> This argument is discussed in reference to European football by Késenne (2000), and Szymanski (2001); and, in reference to Formula One, by Mastromarco and Runkel (2009) and by Judde et al. (2013), among others.

Second, the business activity of these entertainment industries is largely dependent on individuals' skills, including sporting talent along with other abilities that draw the interest of the media and the general public. There is actually a deep-rooted relationship in the literature on European football between team success and player spending (amount of talent hired), as well as between team success and team revenues (cf., Szymanski and Smith, 1997; Forrest and Simmons, 2002). To expand their potential earnings, sporting

teams will try to attract larger levels of talent, sport performance and success. The empirical analysis shown in Section 7 contributes to support the above-mentioned evidence.

Thirdly, European professional football and Formula One are markets characterised by the winner-take-all phenomenon. Frank and Cook (1995) stress that, in this type of markets, workers slightly more productive than their competitors achieve the superstardom status, which allows them to earn much greater rewards than the others. Dobson and Goddard (2001) argue that skewed earnings distributions might be the result of a scarce supply of outstanding talent and of the large audiences such talent attracts. Rosen and Sanderson (2001) claim that winner-take-all elements have become a commonplace in sport labour markets, characterising an increasingly broad range of activities.

In different papers, Garcia-del-Barrio and Pujol (2007, 2009, 2015) show that the winner-take-all effect is at work in various sports industries. The evidence reveals for instance that the top 10% of football players worldwide generate around 50% of the global visibility in mass media. Furthermore, if we consider the media exposure of the 50% top football players in the world, they appear to be responsible for 90% of the overall media visibility in this entertainment industry.

The issue of sports superstars was treated by Noll (1974) and Rosen (1981). Then, Scully (2004) recognised a dual market structure and proposed the necessity to treat separately the different types of players<sup>3</sup>. According to Bryson et al. (2014), there are basically two explanations for the formation of superstar status. On one hand, Rosen (1981) argues that the superstardom status may be declared when “small differences in talent become magnified in large earnings differences” [Rosen, (1981), p.846]. On the other hand, Adler (1985) identifies superstardom to be same as popularity, implying that the latter can occur even in the absence of greater talent: “stardom may be independent of the existence of a hierarchy of talent” [Adler, (1985), pp.208–209]. Bryson et al. (2014) corroborates the existence of superstar effects in Italian Calcio, which are inferred from a positive impact of migrant effects on team performance and crowd attendance.

The analysis made in the present paper takes into account the aforementioned elements. More importantly, all these aspects are integrated into a comprehensive approach that successfully measures the contribution of sportsmen. Conventional attempts to measure the players’ economic contribution to their teams (or to the industry) have usually been constrained to the appraisal of their sport performance. The limits of such a partial approach as concerns professional football were made explicit by Berri (1999) and by Horowitz and Zappe (1998). Moreover, the latter paper states that academic literature generally accepts that players’ rewards in sport labour markets are based solely on sporting performance.

Similar misperceptions may affect the analysis of Formula One and other sport industries. For instance, Eichenberger and Stadelmann (2009) announce their aim of adopting an economic approach, but eventually they restrain their talent assessment for Formula One drivers to observable indicators of drivers’ performance<sup>4</sup>.

In contrast with this view, we advocate that to correctly evaluate the overall contribution of Formula One drivers or football players to their teams, one must not only consider their sport performance, but also consider the other skills that are potentially able to bring forth economic gains. Because the total contribution of players depends in

part on their skills as media leaders, it is necessary to go beyond sports attainments alone to perform a comprehensive assessment.

This opinion was supported by Garcia-del-Barrio and Pujol (2007). More recently, Franck and Nüesch (2012), using data on German football examine the citations on press as measures of media visibility. By distinguishing between on-field and off-field related news articles, they conclude that both sport talent and players' popularity (visibility in the media that is not related to sports) significantly explain the players' market values. Korzynski and Paniagua (2016) also stress that sport talent is not the only factor to explain the market value of sporting stars.<sup>5</sup>

In conclusion, most of the studies conducted in the past have generally failed to accurately measure the overall contribution of players as they neglect essential managerial aspects: the status of individuals in the media and their social recognition. Therefore, to improve decision making in sports industries, we recommend paying attention to sport talent but also to individuals' records on media value status.

### **3 Methodology and data description**

This section describes the methodology used to achieve the aims of this study. The chosen method consists of using media value appraisals to measure the overall contribution – sport talent along with other skills potentially able to generate income – of professional football players and Formula One drivers. To achieve this objective, we rely on the MERIT approach, part of an academic endeavour that has broad applications in the area of sports management.

With the help of new technologies, we are able to examine millions of websites and news articles on the internet, and benefit from having access to large samples, which typically result in reliable outcomes. Building upon this information, we gather large databases and compute indexes of the economic value of talent. Depending on the scope of the analysis, the records may be collected and treated on annual, monthly or weekly bases.

The MERIT approach develops its analysis on the basis of two elements: media value and popularity. The media value refers to the level of attention that the mass media bestows upon individuals or institutions. Popularity is conceived as the degree of interest generated worldwide amongst supporters and the general public; an interest that is measured by the amount of content on internet websites. The media value status is captured by the number of news articles – news hits reported by search engines – in media sources from around the world.

Some technical aspects of the methodology deserve further discussion. On one hand, notice that our analyses are based on information delivered by a variety of media sources on the internet, including digital content from written press, television, radio, etc. We avoid comments from social networks, as they are often superficial or unreflexively expressed. Instead, we rely on the judgements made by professionals, such as journalists, which are more apropos to our interest.

Specific clarifications are also useful in this regard. First, the appraisals based on media value ratings do actually capture players' personal skills and attractiveness beyond the contribution directly linked to sport talent. In fact, the degree of media value exposure is meant to derive from their sport performance, but also from the social recognition of the individual's personal qualities and abilities. Secondly, if understanding correctly the

MERIT approach, one should be aware that the relevant figure is not the absolute number of news articles on its own, but the relative position that each player holds with respect to other competitors. The strength of our approach is precisely that it is based on the comparative positioning of the players. Certainly, from a methodological viewpoint, there is no reason a priori to expect that a certain player will proportionally appear more frequently in media sources with wider dissemination than other players. Hence, there is no need in pondering the degree of diffusion of the different media sources; an omission that would be inadmissible if the attempt were to measure media visibility in absolute terms.

Specifically, to carrying out the analysis of this paper, we collected records on media value and popularity of the Formula One drivers and of more than 5,000 football players. The MERIT media value index is then expressed with respect to the average of the top 2,500 players in our data sample. The media value score is defined as the factor by which the value of a particular individual multiplies the number of news stories of the representative (average) player in the sample. The fact that we use the same reference value for diverse sports legitimises homogeneous comparisons across sportsmen from different disciplines: Formula One, football, tennis, golf, basketball, etc. However, insofar as the MERIT index is expressed with respect to the average value of an evolving sample, the aforementioned reference value changes along with the changes of the values of players registered in the corresponding leagues.

Building upon individual media value ratings, we are able to work out the media value of football clubs and racing teams, and to give an appraisal of the relative media status of each sporting championship. Specifically, the media value index of football or Formula One teams is derived by simply adding up the scores of the individuals who belong to a particular team. Similarly, aggregate figures for sporting leagues or competitions are computed by accumulation of individual media value scores. For instance, to determine the media value rank of a domestic football league, we compute the sum of the 400 most relevant players in the league. In this way, we are able to establish a hierarchy (in terms of media value) of domestic leagues, where each tournament is ranked with respect to the others.

In summary, the MERIT approach permits jointly capturing sport talent along with other non-sport-related skills of sportsmen. More importantly, given that media value ratings are expressed with respect to a common single reference value, it permits the homogeneous comparison of individuals of a wide variety of sporting disciplines today and over time<sup>6</sup>. This methodology may also be helpful to assess the synergies derived from strategic alliances between brands (like Real Madrid or Ferrari) and individuals (like Ronaldo or Alonso).

#### **4 The media value of football players and Formula One drivers**

This section reports the rankings of the top football players and football teams with the greatest media value in seasons 2012–2013 and 2013–2014. It also reports the media value ratings and popularity status of Formula One drivers and Racing teams in 2013 and 2014.

**Table 1** Media value in seasons 2012/13 and 2013/14 – football players and F1 drivers  
(see online version for colours)

<i>Player   F1 Driver</i>	<i>Team</i>	<i>Media value 2013/2014</i>	<i>Media value 2012/2013</i>	<i>Absolute difference</i>	<i>Variation in %</i>	
Cristiano Ronaldo	Real Madrid	37.89	30.75	7.13	23.20	▲
<b>Lewis HAMILTON</b>	<b>MERCEDES</b>	<b>26.60</b>	<b>20.50</b>	<b>6.10</b>	<b>29.75</b>	▲
Lionel Messi	FC Barcelona	24.52	33.72	-9.20	-27.28	▼
<b>Nico ROSBERG</b>	<b>MERCEDES</b>	<b>20.80</b>	<b>12.70</b>	<b>8.10</b>	<b>63.78</b>	▲
Garth Bale	Real Madrid	19.77	10.34	9.42	91.12	▲
<b>Fernando ALONSO</b>	<b>FERRARI</b>	<b>17.70</b>	<b>26.80</b>	<b>-9.10</b>	<b>-33.95</b>	▼
<b>Sebastian VETTEL</b>	<b>RED BULL</b>	<b>16.70</b>	<b>27.60</b>	<b>-11.00</b>	<b>-39.49</b>	▼
Wayne Rooney	Manchester United	16.57	17.48	-0.91	-5.18	▼
Neymar Jr.	FC Barcelona	16.36	9.76	6.59	67.54	▲
Sergio Ramos	Real Madrid	15.66	9.71	5.96	61.37	▲
Diego Costa	Atlético de Madrid	15.33	3.80	11.53	303.33	▲
Karim Benzema	Real Madrid	12.29	8.30	3.99	48.02	▲
Iker Casillas	Real Madrid	12.14	16.78	-4.63	-27.62	▼
Mario Balotelli	AC Milan	12.02	12.44	-0.43	-3.43	▼
Manuel Neuer	Bayern Munich	11.73	9.90	1.83	18.49	▲
<b>Daniel RICCIARDO</b>	<b>RED BULL</b>	<b>10.90</b>	<b>4.40</b>	<b>6.50</b>	<b>147.72</b>	▲
Robin van Persie	Manchester United	10.88	16.85	-5.96	-35.39	▼
Mesut Özil	Arsenal	10.18	8.01	2.16	27.01	▲
Juan Mata	Chelsea/Manch. Utd	9.67	9.49	0.17	1.81	▲
Franck Ribéry	Bayern Munich	9.43	10.56	-1.14	-10.76	▼
Ángel di María	Real Madrid	8.91	8.33	0.58	6.94	▲
Steven Gerrard	Liverpool	8.87	8.43	0.43	5.11	▲
Fernando Torres	Chelsea	8.80	12.25	-3.44	-28.13	▼
Luis Suárez	Liverpool	8.73	10.48	-1.75	-16.72	▼
Andrés Iniesta	FC Barcelona	8.66	11.96	-3.30	-27.58	▼
Arjen Robben	Bayern Munich	8.54	12.15	-3.61	-29.75	▼
Radamel Falcao	Monaco	8.37	17.82	-9.45	-53.02	▼
<b>Felipe MASSA</b>	<b>WILLIAMS</b>	<b>8.30</b>	<b>14.40</b>	<b>-6.00</b>	<b>-42.36</b>	▼
Xabi Alonso	Real Madrid	8.14	5.98	2.16	36.13	▲
Pepe	Real Madrid	8.07	5.63	2.44	43.30	▲
Rob. Lewandowski	Borussia Dortmund	7.80	13.66	-5.85	-42.85	▼
<b>Kimi RAIKKONEN</b>	<b>FERRARI</b>	<b>7.60</b>	<b>16.30</b>	<b>-8.70</b>	<b>-53.37</b>	▼

Note: Annual averages of formal season in football; and year calendar in F1 (data corresponds to the final year of the period).

Source: Authors' own calculations – MERIT Data collection

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The ranking shown in [Table 1](#) is the result of integrating the MERIT index of football players jointly with the Formula One drivers. In this way, our analysis reveals the relative status of worldwide media leaders in the two global entertainment industries. The table actually compares data on football season 2012/13 (calculated as at June 2013) and Formula One season 2013 with data on football season 2013/14 (calculated as at June 2014) and Formula One season 2014.

The media value leader in season 2012/13 was Messi (FC Barcelona), who totalled 33.72 points on the index. This figure means that Messi received an exposure in the media 33.7 times larger than the attention paid to the normal player. Second place was held by Ronaldo (Real Madrid), with 30.75 points. The difference between the two top superstars was reduced from nearly 8 points (at the end of season 2011/12) to just 3 points in June of 2013. Meanwhile, third and fourth places went respectively to Falcao (Atletico de Madrid) and Rooney (Manchester United), both players with about 17 points.

Focusing on Formula One drivers, Sebastian Vettel emerged as the driver with the highest rank in season 2013. Vettel reached 27.6 points in the MERIT index, while Alonso took second place with 26.8 points. Then, Hamilton finished in third place, with 20.5 points.

Table 1 also informs on season 2013/2014 (or 2014), where we witnessed significant changes: Ronaldo appeared as the new global leader, while Messi ranked in the second place. Ronaldo had in season 2013/2014 an exposure in the media 37.9 times greater than the normal (average) player; while this figure was just 24.5 in the case of Messi, who suffered an injury in part of the season. According to our data, the signing of Bale and Neymar for Real Madrid and FC Barcelona, improved significantly the players' respective media value status (notice that the results were computed at the beginning of June 2014, before the World Cup took place).

Regarding Formula One drivers, our analysis indicates that Hamilton was the most significant Formula One driver in 2014, with a media value score equal to 26.6 points in the MERIT index. Rosberg took the second place with 20.8 points, and Alonso held the third position with 17.7 points. The German driver Sebastian Vettel reached the fourth place, with a score of 16.7.

It is worth noting here evidence of the winner-take-all effect, affecting predominately individuals situated in the upper tier of the distribution. Indeed there is a large separation between the leaders and their direct rivals: the media status of Messi and Ronaldo is far beyond the levels of other players. And a similar feature applies, albeit to a lesser degree, in Formula One.

MERIT methodology also permits carrying out more a detailed analysis by looking at the media value evolution over the season. Table 2 displays the evolution in terms of media value of the top 5 football players throughout season 2013/2014 (remember that the MERIT index for a particular year is precisely calculated as the annual average from monthly data).

Among other results, notice that in the final part of the season 2013/14, Gareth Bale expanded the gap he had with respect to Rooney and Neymar, presumably due to scoring two crucial goals: one in the finals of the Spanish Cup and the other in the UEFA Champions League final. Our analysis performed for the top players revealed that Diego Costa and Falcao were respectively, the players with the greatest increase and decrease of media value in season 2013/14.

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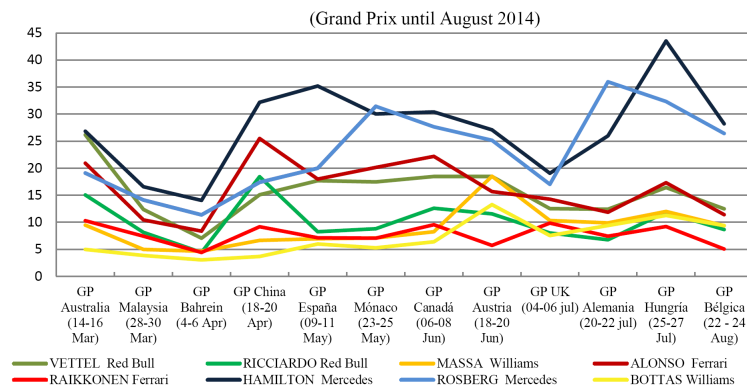
**Table 2** Media value evolution of football players through season 2013–2014

Player	Sep 2013	Oct 2013	Nov 2013	Dec 2013	Jan 2014	Feb 2014	Mar 2014	Apr 2014	May 2014
Ronaldo	21.02	18.64	38.19	26.03	30.89	34.46	42.48	54.23	75.04
Lionel Messi	20.64	23.88	17.47	17.64	14.90	31.18	44.61	22.50	27.87
Gareth Bale	24.51	23.67	23.85	13.12	10.06	15.49	12.73	28.38	26.09
Rooney	9.20	9.13	22.36	15.05	21.35	16.02	25.52	17.29	13.22
Neymar	14.48	14.46	9.03	6.51	20.54	10.45	27.91	24.35	19.48

Source: Authors' own calculations – MERIT data collection

Applying a similar analysis to Formula One drivers, some illustrative results of the media value evolution were obtained as shown in Figure 1 (in this case, we gathered information associated with each Grand Prix).

**Figure 1** Evolution of the merit media value index – F1 drivers (see online version for colours)



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In the description of MERIT methodology, a distinction between media value and popularity is made. The majority of the analyses performed here are based on media value ratings.

Additionally, one may wish to focus on the long-term interest which is directly related to popularity status. To illustrate this alternative approach, Table 3 shows some results regarding the Formula One drivers.

For the correct understanding of this methodological aspect, one must be aware of the relationship and differences between media value and popularity. Popularity we understand to mean the impression left by media visibility after the passage of time. That is to say, popularity is the legacy effect that accumulates around individuals, providing them long-lasting interest among the crowds. As noted earlier, we propose capturing the legacy effect by measuring the amount of content on the internet that is associated with a player or team over the years.



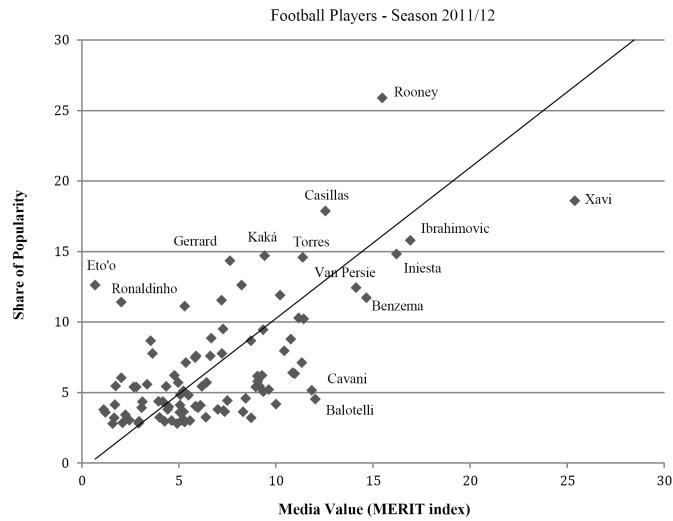
**Table 3** Popularity in Formula One – years 2013 and 2014

<i>DRIVER (team)</i>	<i>Popularity Share 2014</i>	<i>Popularity Share 2013</i>	<i>Absolute Difference</i>	<i>Variation in Percentage</i>
HAMILTON (Mercedes)	18.3%	18.8%	-0.5	-2.4%
ALONSO (Ferrari)	14.0%	15.3%	-1.3	-8.7%
VETTEL (Red Bull)	10.9%	12.5%	-1.6	-12.6%
ROSBERG (Mercedes)	8.8%	4.9%	3.9	79.0%
BUTTON (McLaren)	7.0%	9.3%	-2.3	-25.2%
RAIKKONEN (Ferrari)	6.1%	11.5%	-5.4	-47.1%
MASSA (Williams)	5.5%	8.8%	-3.3	-37.3%
RICCIARDO (Red Bull)	4.4%	0.8%	3.6	450.5%
SUTIL (Sauber)	3.7%	0.5%	3.2	635.8%
GROSJEAN (Lotus)	2.7%	3.0%	-0.3	-9.3%
HULKENBERG (Force India)	2.5%	0.8%	1.7	207.7%

Source: Authors' own calculations – MERIT data collection

Figure 2 illustrates the relationship between these two notions: media value and popularity. Generally, appraisals of the degree of popularity often present enormous parallels with that of the media value, although there are special cases where this is not true.

**Figure 2** MERIT – popularity versus media value

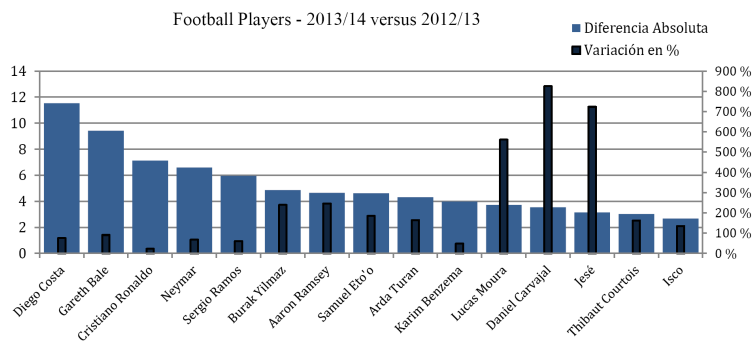


The graph illustrates that being popular does not necessarily mean that players enjoy media value appraisals equivalent to their levels of popularity. This is visible in the case of Eto'o and Ronaldinho who, for example, in 2011/2012 retained a high status in terms of popularity, but whose media value score decreased along with their level of football performance.

Another interesting analysis is examining the variations of the media value status, since the players with large increases are those whose future professional careers seem more promising. We thus identify the players that had the greatest variation in media value, calculated as the difference between the average of a certain season and the same figure of the previous season. If we compare media value scores between June 2012 and June 2013, we find: Falcao (increase of about 13.5%), Neymar (13.1% increase), Lewandowski (12.9%), Bale (7.2%) and Hazard (6.4%). Notice that many of these players changed teams to join a top club shortly before the 2013/14 season started: Falcao moved from Atlético de Madrid to Monaco; Neymar, from Santos to FC Barcelona; Lewandowski, from Borussia Dortmund to Bayern Munich; and Bale, from Tottenham Hotspur to Real Madrid.

Secondly, regarding the variation of annual averages in season 2013/14 with respect to the average media value in the preceding season, Figure 3 identifies, among top worldwide players, 15 relevant players with the greatest expansions in the MERIT index. The graph reports the variations expressed both in absolute terms and in relative changes (as a percentage).

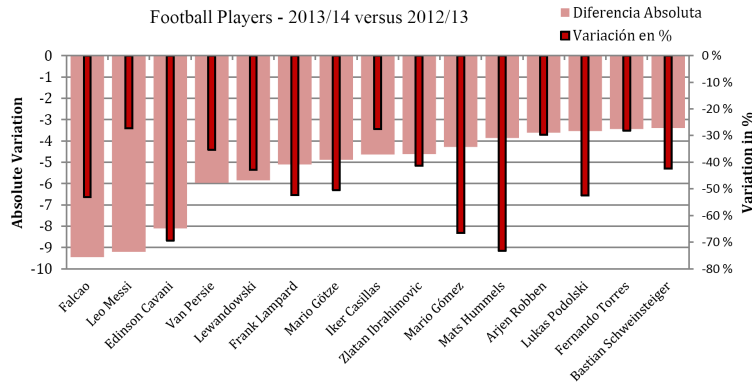
**Figure 3** Increase of media value (see online version for colours)



Similarly, Figure 4 identifies the other extreme, the players who experienced the greatest losses of media value in season 2013/2014 as compared to the previous season 2012/2013.

Falcao was, among the top 200 players worldwide, but also the one with greatest absolute losses in the index between 2013/2014 and 2012/2013. The injuries affecting Messi may explain why the top superstar is found in this group. Among the players with clear losses of media value are some top players whose performance in 2013/2014 was poorer than the outstanding level they typically had in the past, like Lewandowski, Lampard, Van Persie or Casillas.

**Figure 4** Decrease in media value (see online version for colours)



### 5 Rankings by countries and other analyses based on media value

The purpose of this section is twofold. First, we offer a disaggregated analysis by countries, a task which is especially interesting for identifying the main players across different nationalities or regional markets. The issue is especially relevant in the context of commercial campaigns and brand development, since sport icons and superstar players may attract local sponsorship contracts and boost merchandising sales. Secondly, through aggregation procedures, we compute the media value ranking of football teams, as it is shown at the end of this section.

The disaggregated calculations and rankings follow essentially the same methodological approach previously described. However, given the new scope of analysis, the method is accommodated in two ways. First, the searching procedure is naturally constrained to the area of each of the selected countries. Second, the reported records do not correspond to the MERIT index, but rather to the share of media visibility achieved by the players (percentage calculated with respect to the top 20 most popular players worldwide). Table 4 gives notice of the top 5 football players in each of the selected countries.

In this respect, as well as global icons, Ronaldo and Messi emerge as local superstars in the most relevant football markets. One exception, among others, to this pattern is found in Germany, where Neuer appears as the main protagonist and opens a big gap with respect to the second player, Özil, despite the fact that he was not playing in the Bundesliga. Another player to be mentioned is Neymar, whose predominance in Brazil is paramount.

A similar disaggregated study was carried out for examining the status of Formula One drivers in 2014. The main results are displayed in Table 5.

**Table 4** Top 5 football leaders – media value share by countries (season 2013/2014)

	Spain		UK		Germany		Italy		France	
	%		%		%		%		%	
1°	C. Ronaldo	17.1	Rooney	15.9	Neuer	25.8	Balotelli	16.9	Ibrahimovic	12.8
2°	Messi	14.1	C. Ronaldo	9.7	Özil	12.5	Higuain	16.4	C. Ronaldo	12.4
3°	Bale	11.6	Ozil	9.4	Lewandoswki	12.2	DiegoCosta	12.5	Messi	10.7
4°	Neymar	11.3	Gerrard	8.0	Ribery	12.1	C. Ronaldo	11.9	Benzema	7.9
5°	DiegoCosta	11.2	Messi	7.9	C. Ronaldo	8.4	Messi	6.2	Neymar	7.7
	Brazil		USA		Sudafrica		Turkey		India	
	%		%		%		%		%	
1°	Neymar	29.8	Messi	13.4	Messi	22.9	Özil	20.7	C. Ronaldo	18.5
2°	Messi	17.5	C. Ronaldo	13.0	Neymar	11.3	C. Ronaldo	18.3	Rooney	17.2
3°	C. Ronaldo	13.9	Rooney	12.0	C. Ronaldo	10.4	Messi	17.3	Messi	14.9
4°	DiegoCosta	10.2	Neymar	10.2	Rooney	9.6	Neymar	10.2	Luis Suarez	9.8
5°	Ibrahimovic	2.8	Luis Suarez	6.3	Ozil	8.3	DiegoCosta	8.7	Neymar	7.9

Source: Authors' own calculations – MERIT data collection

**Table 5** Formula One drivers – media value share by countries (season 2014)

	<i>Germany</i>		<i>UK</i>		<i>Spain</i>		<i>Finland</i>	
1	ROSBERG	22%	HAMILTON	21%	ALONSO	28%	RÄIKKÖNEN	23%
2	HAMILTON	20%	ROSBERG	13%	HAMILTON	13%	HAMILTON	13%
3	VETTEL	18%	BUTTON	7%	ROSBERG	10%	BOTTAS	12%
4	RICCIARDO	9%	RICCIARDO	6%	VETTEL	8%	ROSBERG	11%
5	ALONSO	5%	VETTEL	5%	RÄIKKÖNEN	7%	ALONSO	11%
6	RÄIKKÖNEN	4%	MASSA	5%	RICCIARDO	4%	MASSA	7%
7	HULKENBERG	4%	ALONSO	4%	MASSA	4%	VETTEL	6%
8	SUTIL	3%	RÄIKKÖNEN	4%	PEREZ	4%	RICCIARDO	5%
9	MASSA	3%	PEREZ	4%	BUTTON	3%	BUTTON	3%
10	BUTTON	3%	BOTTAS	3%	BOTTAS	2%	MAGNUSSEN	2%
	OTROS	9%	OTROS	28%	OTROS	17%	OTROS	7%
	<i>USA</i>		<i>Brazil</i>		<i>Mexico</i>		<i>Argentina</i>	
1	HAMILTON	17%	MASSA	16%	HAMILTON	14%	HAMILTON	14%
2	ROSBERG	12%	HAMILTON	10%	ROSBERG	12%	ALONSO	12%
3	VETTEL	9%	ROSBERG	10%	PEREZ	10%	ROSBERG	12%
4	ALONSO	8%	ALONSO	7%	ALONSO	9%	MASSA	8%
5	RICCIARDO	8%	BOTTAS	7%	RICCIARDO	7%	VETTEL	7%
6	RÄIKKÖNEN	6%	VETTEL	5%	VETTEL	7%	MALDONADO	7%
7	BUTTON	6%	RICCIARDO	5%	GUTIERREZ	6%	RICCIARDO	6%
8	MASSA	5%	RÄIKKÖNEN	5%	RÄIKKÖNEN	5%	RÄIKKÖNEN	4%
9	BOTTAS	3%	BUTTON	3%	MASSA	4%	PEREZ	4%
10	PEREZ	3%	MAGNUSSEN	3%	BOTTAS	4%	BOTTAS	4%
	OTROS	23%	OTROS	29%	OTROS	22%	OTROS	22%

*Source:* Authors' own calculations – MERIT data collection

To correctly interpret the results of Table 5 regarding Formula One drivers, note that percentages of media value shares we computed instead of the MERIT index. These are two alternative calculations that are essentially similar in the context of Formula One drivers. As there is a limited sample size of 22 pilots, the use of percentage shares is more convenient and equally informative as compared to the MERIT index.

As indicated by our results, not surprisingly, the nationality of Formula One drivers makes a significant impact. It is also clear that sport performance and success is crucial to explain the differences in terms of media value recognition. In this regard, it is remarkable the first position held by Hamilton in countries like the USA, Mexico, Argentina and UK. The same reasoning also explains the leading position achieved in 2014 by Rosberg in Germany, and the large shares of media value he obtained in other markets. Regarding the Spanish market, first place in the rankings was of course attained by Alonso. The other Ferrari driver at that time, Räikkönen, is found first in Finland. Hamilton, the world champion in 2014, held the second place in both Spain and Finland.

The second type of analysis performed in this section, elaborating upon individual scores, consists of developing aggregate figures for teams. The media value index for football clubs are thus computed as the sum of individual values of the 15 players with the greatest media value ratings within the team.

According to our calculations, at the end of season 2012/2013, Real Madrid (134.7 points) ranked in the first position, overtaking the leader of the previous years, FC Barcelona (which achieved 109.7 points). The third place was Bayern Munich, whose 93.2 points placed the German team closer to Barcelona. Poor performance of English clubs in the UEFA Champions League resulted in Manchester United, the main contender in the Premier League, holding only the fifth post in the ranking.

As for season 2013/14, Real Madrid was again the leading worldwide team in terms of media value. Real Madrid accumulated 162.0 points, and FC Barcelona, who ranked second, obtained a similar rating to their previous year of 109.7 points. The two Spanish giants are followed by

Manchester United and Bayern Munich. Table 6 summarises the information on media value scores of the most relevant football teams in the two seasons analysed.

**Table 6** Media value of football clubs in seasons 2012/2013 and 2013/2014

<i>Rank</i>	<i>Team (2012/13)</i>	<i>League</i>	<i>Media value index</i>
1	Real Madrid	Liga BBVA	134.73
2	FC Barcelona	Liga BBVA	109.74
3	FC Bayern Munich	Bundesliga	93.19
4	Chelsea FC	Premier League	91.08
5	Manchester United	Premier League	86.90
6	Borussia Dortmund	Bundesliga	62.94
7	Juventus FC	Serie A	57.56
8	Arsenal FC	Premier League	49.51
9	Manchester City	Premier League	48.35
10	Paris Saint-Germain	Ligue One	47.19
11	SSC Napoli	Serie A	46.61
12	Atlético de Madrid	Liga BBVA	44.57
13	Liverpool	Premier League	44.06
14	Tottenham	Premier League	41.93
15	Inter de Milan	Serie A	36.69
16	Milan AC	Serie A	36.49
17	AS Roma	Serie A	33.70
18	Valencia	Liga BBVA	27.11
19	Lazio	Serie A	23.86
20	Benfica	Liga Portuguesa	20.36

*Source:* Authors' own calculations – MERIT data collection

**Table 6** Media value of football clubs in seasons 2012/2013 and 2013/2014 (continued)

Rank	Team (2013/14)	League	Media value index
1	Real Madrid	Liga BBVA	162.0
2	FC Barcelona	Liga BBVA	109.7
3	Manchester United	Premier League	87.7
4	Bayern Munich	Bundesliga	78.5
5	Chelsea FC	Premier League	76.1
6	Atlético de Madrid	Liga BBVA	64.3
7	Liverpool	Premier League	57.4
8	Arsenal FC	Premier League	57.4
9	Juventus	Serie A	48.8
10	Manchester City	Premier League	45.9
11	AC Milan	Serie A	41.5
12	Paris Saint-Germain	League One	35.2
13	AS Roma	Serie A	31.9
14	Galatasaray	Süper Lig	31.4
15	SSC Napoli	Serie A	30.7
16	Borussia Dortmund	Bundesliga	26.0
17	Inter de Milan	Serie A	25.8
18	Sevilla	Liga BBVA	24.6
19	Valencia	Liga BBVA	21.8
20	Benfica	Primeira Liga	21.2

Source: Authors' own calculations – MERIT data collection

**Figure 5** Evolution of the media value index – 2013/14 (see online version for colours)

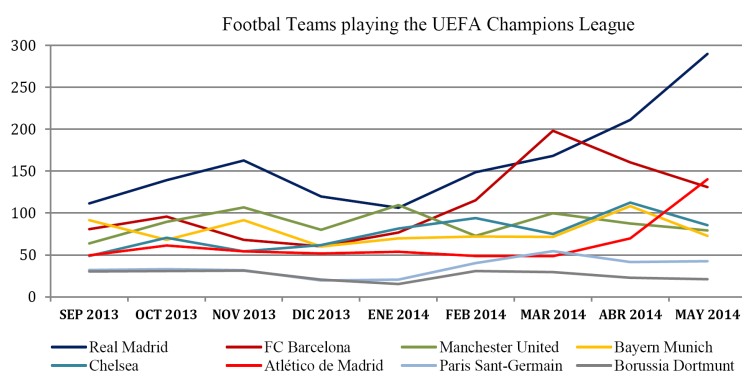


Figure 5 illustrates the monthly evolution over the season 2013/2014 of teams that went through the quarter final round of the UEFA Champions League. The evolution seems to follow the circumstances and sport achievements of the teams, a behaviour which is especially clear in the final part of the season. Note that Real Madrid and Atlético de Madrid (the two finalists of the UEFA Champions League) experienced a remarkable increase in media value precisely in May of 2014, at the time of that important sport event. The fact that Atlético de Madrid was the winner of the Spanish domestic league was also undoubtedly very influential.

Regarding Formula One, the results for 2014 are as follow: top spot was taken by Mercedes, the winner of the 2014 Formula One World Constructors' Championship, with 47.4 points; followed by Red Bull, with 27.6 points. Mercedes has therefore gained the media dominance that Red Bull or Ferrari enjoyed in the past. Notice that these figures cannot be homogeneously compared with those of football teams, since here we have only two drivers instead of 15 players.

## **6 Hierarchy of sporting competitions: revenues and media value**

This section undertakes the attempt to rank the status of domestic football leagues, and also that of the Formula One championship. To this aim we adopt two alternative approaches. Initially, our analysis is based solely on economic variables, by comparing total revenues of the respective leagues and their growing evolution over the years. At the end of this section, we address the identical objective but this time relies on media value appraisals.

A detailed account of the first approach is given in Table 7, which reports total revenues of the 'big five' domestic football leagues (England, France, Germany, Italy and Spain) over the period from 1995 to 2015. Undeniably, the economic data gives a first approximation to the assessment of football leagues hierarchy, based on the revenue as an indicator of relative market size. The data informs of the growing evolution of leagues' revenues over the years.

The total revenues of professional football were largely dominated by the 'big five' leagues, whose cumulative revenue in season 2014/2015 totalled €12.1 billion. Among them, the highest revenues are found in the English Premier League, with over €4,400 million (cf. Deloitte, 2016).

Figure 6.1 represents part of the information in Table 7, but constraining the period to fewer seasons and presenting the revenues as a ratio: the figure of each domestic league divided by the combined overall revenues of 'big five' leagues. The graph enables us to visually judge the position of each domestic football league in terms of revenues ('economic hierarchy').

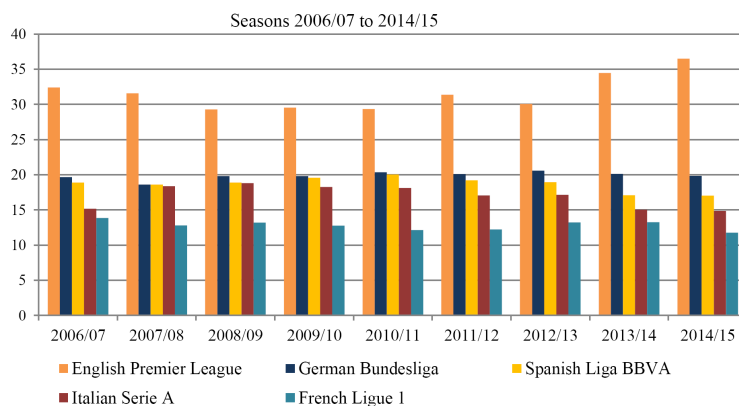
Comparing the revenues of these important European sports (football and Formula One) with the revenues of other sport industries (American football, basketball and baseball) is also an insightful exercise. Table 8 summarises the relevant data in this respect.



**Table 7** Total revenues – ‘big five’ European football leagues (in thousands euros)

Season	Premier League	German Bundesliga	Spanish La Liga	Italian Serie A	French Ligue 1	TOTAL ‘big five’
1995/96	516	373	366	452	277	1,984
1996/97	692	444	524	551	293	2,504
1997/98	867	513	569	650	323	2,922
1998/99	998	577	612	714	393	3,294
1999/00	1,151	681	683	1,059	607	4,181
2000/01	1,397	880	676	1,151	644	4,748
2001/02	1,688	1,043	776	1,127	643	5,277
2002/03	1,857	1,108	847	1,152	689	5,653
2003/04	1,976	1,058	953	1,153	655	5,795
2004/05	1,975	1,236	1,029	1,219	696	6,155
2005/06	1,994	1,195	1,158	1,277	910	6,534
2006/07	2,273	1,379	1,326	1,064	972	7,014
2007/08	2,441	1,438	1,438	1,421	989	7,727
2008/09	2,326	1,575	1,501	1,494	1,048	7,944
2009/10	2,479	1,664	1,644	1,532	1,072	8,391
2010/11	2,515	1,746	1,718	1,553	1,040	8,572
2011/12	2,917	1,869	1,788	1,587	1,138	9,298
2012/13	2,946	2,018	1,859	1,682	1,297	9,802
2013/14	3,898	2,275	1,933	1,699	1,498	11,303
2014/15	4,400	2,392	2,053	1,792	1,418	12,055

Source: Deloitte Annual Review of Football Finance and authors’ collection from Spanish Clubs’ accounts

**Figure 6** Revenues (€ ,000) – ‘big-five’ football leagues (see online version for colours)

**Table 8** Total revenues – professional sports industries (in thousands euros)

<i>Year</i>	<i>Season</i>	<i>Formula One</i>	<i>Soccer 'big five'</i>	<i>NFL revenues</i>	<i>NBA revenues</i>	<i>MLB revenues</i>
2002	2001/02	–	5,277.0	4,712.4	2,537.5	3,481.8
2003	2002/03	580.6	5,653.0	4,244.7	2,166.1	3,089.9
2004	2003/04	738.1	5,795.0	4,419.5	2,147.5	3,129.6
2005	2004/05	849.3	6,155.0	5,200.7	2,693.2	3,993.4
2006	2005/06	811.2	6,534.0	4,953.5	2,552.5	3,870.4
2007	2006/07	784.9	7,014.0	4,813.8	2,423.9	3,720.7
2008	2007/08	984.6	7,727.0	5,369.8	2,674.2	4,128.4
2009	2008/09	996.3	7,944.0	5,595.4	2,644.2	4,116.3
2010	2009/10	1,078.3	8,391.0	6,300.5	2,874.8	4,632.9
2011	2010/11	1,186.9	8,572.0	6,810.8	3,057.9	4,911.2
2012	2011/12	1,286.1	9,297.5	6,937.5	2,784.1	5,152.0
2013	2012/13	1,234.8	9,802.2	6,958.2	3,312.1	5,156.9
2014	2013/14	1,320.0	11,303.0	8,941.9	3,940.3	6,465.8
2015	2014/15	1,500.0	12,055.0	11,155.1	4,751.9	7,696.7

*Source:* Statista (<http://www.statista.com>) and Deloitte Annual Review of Football Finance

Notice in this context that the debate on whether sport industries produce profits is closely linked to the size of the economic returns associated to sports leagues. It seems clear that there is a different behaviour, regarding profit seeking, between the American and European sports industries. In European football, in spite of the large revenues amassed by the leagues, the clubs seldom make profits (see, Sloane, 1971; Késenne, 1996, 2000; among others)<sup>7</sup>.

To be aware of the extent to which the domestic football markets have developed over the last decades, the analysis of Table 9 is very revealing. It compares, for similar periods, the revenue growth of domestic football leagues (5-year average of annual growth rates), with the real GDP growth (5-year average of annual growth rates) of the countries that host the respective leagues.

The significant gap between these two indicators is staggering, suggesting sports industries may have acted as a source of economic growth in spite of the poor macroeconomic situation presently seen in Europe.

Inspection of previous tables leads to the conclusion that European professional football is a powerful and promising sector, which acts as an engine fostering economic activity and prosperity. The average growth rates of the European football leagues, in the period 1996 to 2015, are around 10%. (This figure reaches beyond 12% in the case of England). In comparison, the entire EU economy grew less than an average of 1% for the same period.

To highlight the astounding trend of growth rates in the football industry, versus that seen in the overall economy, we calculate the ratio between the former growth rate (upper part in the last column of Table 9) and the latter (lower part in the last column of Table 9). Through these ratios, we obtain the factors expressing how many times the growth rate of a domestic league exceeds the growth rate of the country where the

competition takes place. The results of this procedure, applied to the whole period 1996–2015, yield a multiplying factor of 9.65 for the case of Formula One. Similarly, the aggregate figure for the ‘big five’ European domestic leagues lead to a factor of 11.30. In both cases, we take the GDP growth rate of the EU (28 countries) as the point of comparison. Ratios for each of some selected domestic football leagues are as follows: England: 10.36; Germany: 7.54; Spain: 24.53. In a more detailed analysis, similar analyses can be applied to each of the 5-years periods shown in Table 9.

**Table 9** Revenue growth versus GDP growth (5-year average of annual growth rate in %)

<i>Revenue growth (in %)</i>	<i>1996–2000</i>	<i>2001–2005</i>	<i>2006–2010</i>	<i>2011–2015</i>	<i>1996–2015</i>
Formula One	---	21.10	5.42	7.00	8.69*
TOTAL Big Five	20.64	8.11	6.42	7.60	10.17
English Premier League	22.46	11.71	4.84	12.72	12.43
German Bundesliga	16.27	13.26	6.31	7.56	10.56
Spanish Liga	17.73	8.68	9.88	4.55	9.81
Italian Serie A	24.51	2.93	5.86	3.21	8.32
French Ligue 1	23.03	2.88	9.51	6.11	9.72
<i>GDP growth (in %)</i>	<i>1996–2000</i>	<i>2001–2005</i>	<i>2006–2010</i>	<i>2011–2015</i>	<i>2005–2015</i>
EU (28) growth rate	3.15	1.91	0.94	0.47	0.9
UK	3.25	2.94	0.57	2.13	1.2
Germany	2.19	0.57	1.30	1.08	1.4
Spain	4.44	3.39	1.10	0.08	0.4
Italy	2.18	0.94	–0.27	–1.00	–0.5
France	3.29	1.66	0.79	0.68	0.9

Note: \*Formula One: average for 2001–2015 instead of 1996–2015.

Source: OECD series, Deloitte Annual Review of Football Finance and authors’ own calculations

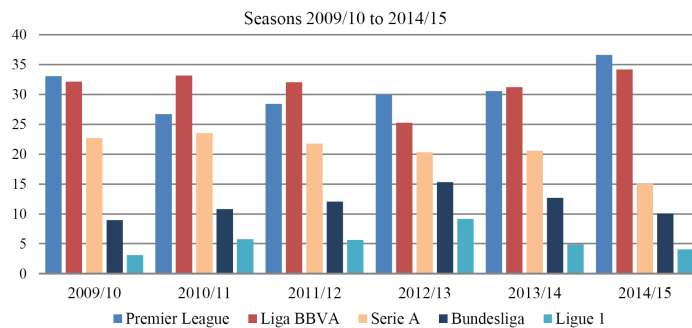
We next examine the comparative status of the main domestic football leagues by adopting the alternative approach of the media value viewpoint. To this aim, we obtained aggregate figures by adding individual records of the 400 most popular players registered in each domestic league. Once this task is fulfilled, one can then homogeneously compare the relative situation of each competition with respect to the interest generated by the other domestic leagues. In this way, we are able to define an alternative ‘media value hierarchy’ as a complement to the ‘economic hierarchy’ previously shown in this section. Thus, the judgement on the relative status of the different ‘big five’ leagues can be easily made by examination of Table 10 and Figure 7, which additionally informs us about their comparative situation over time.

According to our data, in 2012/13 the Premier League regained its traditional supremacy, since its media value rating was above that of all the other European domestic leagues. For a couple of years after the Spanish team won the 2010 World Cup, the Spanish league (La Liga) overtook the English Premier League in terms of media value score.

**Table 10** Media value status of the ‘big five’ domestic leagues in Europe

LEAGUE	Country	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
Premier League	England	33.07	26.73	28.43	29.91	30.58	36.64
La Liga	Spain	32.17	33.18	32.05	25.28	31.23	34.19
Serie A	Italy	22.72	23.51	21.79	20.33	20.59	15.07
Bundesliga	Germany	8.95	10.79	12.08	15.33	12.70	10.04
Ligue 1	France	3.09	5.78	5.65	9.15	4.89	4.06
TOTAL		100.00	100.00	100.00	100.00	100.00	100.00

Source: Authors' own calculations – MERIT Data collection

**Figure 7** Media value status – domestic football leagues (see online version for colours)

The third and fourth places were occupied, respectively, by the Italian Serie A and the German Bundesliga. Finally, the French Ligue 1 took on greater importance in 2012/13 helped by the popularity of various new players who joined PSG: Ibrahimovic, Thiago Silva, Lucas Moura, etc., and David Beckham. Notice also that the last weeks of season 2013/14 were not particularly good, in terms of sport achievements, for the Italian Serie A and the French Ligue 1, since their main teams all failed to qualify for the final rounds of the UEFA Europa League or UEFA Champions League. Consequently, these leagues display poor ratings of media value exposure.

In conclusion, we would like to stress that the approach based on media value ratings is helpful to complement the comparisons made exclusively on the basis of economic returns. Moreover, data on annual revenues may be actually providing information concerning current and past economic value, whereas the degree of media exposure may be better able to approximate the future potential economic power. Therefore, our innovative approach may be more appropriate than others to predict figures on future merchandising revenues and the returns of sponsorship investments.

## 7 Regression analysis: European football vs. Formula One

This section applies econometric techniques to investigate the empirical relationship between sport performance, media visibility and economic revenues for football teams and Formula One drivers. We have gathered a sample of 60 observations of football

teams and between 44 and 68 observations when the estimated models were those of Formula One drivers. Although the data span is not very large, it is enough to conduct prospective cross-sectional analysis.

Tables 11 and 12 summarise the main statistics of the estimated models for both sports examined.

**Table 11** Descriptive statistics – football teams

<i>Premier League (2012/13 to 2014/15)</i>	<i>Sample</i>	<i>Mean</i>	<i>Stand. dev.</i>	<i>Minimum</i>	<i>Maximum</i>
Salary (mill. €)	57	-2.291568	0.538435	-2.964129	-1.189825
Sport performance <sup>†</sup>	60	0	1.507514	-2.995732	2.995732
Media value <sup>††</sup>	60	2.831167	0.856930	1.45	4.66
Rank (league position)	60	10.5	5.814943	1	20
<i>Italian Calcio (2012/13 to 2014/15)</i>	<i>Sample</i>	<i>Mean</i>	<i>Stand. dev.</i>	<i>Minimum</i>	<i>Maximum</i>
Salary (Mill. €)	60	-3.183337	0.719527	-4.850888	-1.692330
Sport performance <sup>†</sup>	60	0	1.507514	-2.995732	2.995732
Media value <sup>††</sup>	60	2.379000	0.862310	0.15	4.05
Rank (league position)	60	10.5	5.814943	1	20

Notes: <sup>†</sup>‘Sport performance’ is defined as:  $\ln((n - \text{position})/\text{position})$ ; where ‘n’ accounts for the number of competitors.

<sup>††</sup>‘Media value’ is calculated as  $\ln(\text{Merit index})$ .

**Table 12** Descriptive statistics – Formula One drivers

<i>Formula One (2013 and 2014)</i>	<i>Sample</i>	<i>Mean</i>	<i>Stand. dev.</i>	<i>Minimum</i>	<i>Maximum</i>
Salary (mill. €)	44	0.5139009	1.709026	-1.89712	3.091043
Sport performance <sup>†</sup>	44	0	1.530647	-3.091043	3.091043
Media value <sup>††</sup>	44	1.770347	0.8387215	0.5877867	3.440418
Rank (league position)	44	11.5	6.417636	1	22
<i>Formula One (2012 to 2014)</i>	<i>Sample</i>	<i>Mean</i>	<i>Stand. dev.</i>	<i>Minimum</i>	<i>Maximum</i>
Salary (mill. €)	68	0.5167873	1.691592	-1.89712	3.401197
Sport performance <sup>†</sup>	68	0	1.530069	-3.178054	3.178054
Media value <sup>††</sup>	68	1.804526	0.9904403	-1.427116	3.440418
Rank (league position)	68	11.85294	6.620332	1	24

Notes: <sup>†</sup>‘Sport performance’ is defined as:  $\ln((n - \text{position})/\text{position})$ ; where ‘n’ accounts for the number of competitors.

<sup>††</sup>‘Media value’ is calculated as  $\ln(\text{Merit index})$ .

Before describing briefly the variables used, notice that in each case they have been transformed through taking the natural logarithm. The purpose of this empirical analysis is to explain the extent sport and non-sport related skills contribute to the economic returns: either drivers’ earnings or football teams’ revenues. The chosen dependent variable is hence the total annual revenues or salaries (expressed in millions of euros).

In deciding what alternative measure of performance we should use and how to express some explanatory variables, we chose the option that would allow us to perform homogeneous comparisons between football and Formula One. Thus, our ‘sport performance’ variable is defined as:  $\ln((n - \text{position})/\text{position})$ ; where ‘n’ accounts for the number of competitors in the football or Formula One championships. Despite our efforts, small discrepancies arose concerning ‘sport performance’ in Formula One, since relevant changes in the points accounting system affected the 2012 season. This difficulty explains that we decided to offer an initial analysis with only 44 observations; then, other alternative regression using 66 observations. The trade-off between pros and cons of using a short database or a larger but less homogeneous sample is not further discussed, since it is overcome by computing and showing the estimated results for both models.

Remind that we are especially interested to know about off-field abilities of individuals or teams, since popularity may often contribute to the business even more than sporting skills. To benefit from the information contained in the media value index while avoiding multicollinearity problems, the conventional procedure of using the residuals of models in Table 13 may be helpful. We introduced ‘net media value’ into the regressions of Table 14 – instead of the original ‘media value’ – to prevent distortions in the estimated coefficients of other regressors, a problem that would otherwise arise.

**Table 13** Media value models (net of sport performance)

Explanatory variables	Dependent variable: Media value   Sport performance			
	European football Premier League	European football Italian Serie A	Formula One 2 seasons	Formula One <sup>††</sup> 3 seasons
Sport performance <sup>†</sup>	0.4185 (8.19)***	0.3798 (6.55)***	0.5114 (16.84)***	
Media value <sup>††</sup>				1.4534 (9.07)***
Season 2013/2014	-0.1615 (-1.04)	0.0635 (0.29)		
Season 2014/2015	-0.4785 (-2.65)**	-0.4745 (-2.36)**		
Year 2013				-0.1543 (-0.89)
Year 2014			-0.4060 (-5.97)***	0.4358 (2.11)**
Constant	3.0445 (30.50)***	2.5160 (14.30)***	1.9733 (51.23)***	-2.7138 (-6.51)***
R <sup>2</sup>	0.5970	0.5197	0.9311	0.8588
N. of obs.	60	60	44	68

Notes: Statistical significance: \*\*\*p-value < 0.01; \*\*p-value < 0.05; \*p-value < 0.10; (t-statistic) in parenthesis.

<sup>†</sup>‘Sport performance’ is defined as:  $\ln((n - \text{position})/\text{position})$ ; where ‘n’ accounts for the number of competitors.

<sup>††</sup>‘Media value’ is calculated as  $\ln(\text{Merit index})$ .

<sup>†††</sup>The procedure was applied in this case filtering ‘media value’ from ‘sport performance’, which is thus the dependent variable of the fourth model.

**Table 14** Regression models – football versus Formula One

Explanatory variables	Dependent variable: $\ln(\text{Wages})$			
	European football Premier League	European football Italian Serie A	Formula One 2 seasons	Formula One 3 seasons
Sport performance <sup>†</sup>	0.2574 (10.49)***	0.3537 (10.77)***	0.9294 (12.75)***	1.0294 (3.74)***
Net media value <sup>††</sup>	0.4994 (9.52)***	0.2835 (3.30)***	1.0673 (2.22)**	1.2333 (6.76)***
Season 2013/2014	0.0826 (1.12)	0.0515 (0.40)		
Season 2014/2015	0.2092 (2.56)**	-0.3550 (-2.40)**		
Year 2013				-0.3212 (-1.07)
Year 2014			0.3643 (1.30)	0.5438 (1.53)
Constant	-2.4060 (-46.3)***	-3.0821 (-28.7)***	0.3317 (2.02)**	-1.7807 (-3.54)***
R <sup>2</sup>	0.8224	0.6753	0.7235	0.6359
N. of Obs.	57	60	44	68

Notes: Statistical significance: \*\*\*p-value < 0.01; \*\*p-value < 0.05; \*p-value < 0.10; (t-statistic) in parenthesis.

<sup>†</sup> 'Sport performance' is defined by:  $\ln((n - \text{position})/\text{position})$ ; where 'n' accounts for the number of competitors.

<sup>††</sup> 'Net media value' is calculated as the residuals of the models in Table 3 (by filtering away 'Sport Performance').

The results of the empirical analysis reported in Table 13 corroborates, as expected, that media value status is positive and strongly dependent on sport performance. More importantly, we have now proved that other skills apart from sporting abilities are useful to explain the annual salaries of Formula One drivers or the total revenues of football clubs. Indeed, the results of Table 14 convey positive and statistically significant estimated coefficient for the respective variables: sport performance and net media value. Further research is needed to understand the non-essential differences found between football and Formula One.

## 8 Concluding remarks

In this paper we have evaluated talent in two global industries of sports: European Professional football and Formula One. Several objectives had been accomplished. First, the main aspects of the MERIT approach were described and this methodology was proposed as a reliable procedure to measure the economic value of sporting talent along with other valuable skills of sportsmen. The issue is relevant, given the increasing number of firms whose business depends on adopting the right managerial practices with intangible assets. Following the lines of the MERIT approach, we examined millions of

news articles and internet sites and collected large databases to elaborate indexes of the economic value of talent, as captured by the degree of exposure in the media.

The paper further described the procedure for computing the MERIT individual index, a task performed by assessing the level of exposure in the media of football players or Formula One drivers. Significant effort was made to explain that media value appraisals measure infield and off-field talent jointly, a feature that applies to most, if not all, of the sports industries. The analysis permits performing the assessment of career perspectives and future economic expectations of drivers or players in Formula One or football markets.

In addition to individual media value appraisals, this paper examined the evolution of media value over the seasons and carried out disaggregated analyses by countries. Based on individual media value appraisals, we were also able to rank – in terms of media value – the status of teams and leagues. Relying on aggregate figures of media value, we calculated the comparative ranking of teams', and established the hierarchy, in terms of recognition in the media, of various competitions of these global entertainment industries. Moreover, our approach was deemed successful in stressing the similarities and differences in regards to the relative positioning of the competitions according to the economic hierarchy or, alternatively, the ranking derived from the media value appraisals.

In addition to descriptive analyses, which we consider already relevant, this paper gives insights on managerial issues, as it helps predict the future career and economic perspectives of sportsmen. We carried out an empirical analysis (through linear regression models) for exploring the relationship between sport performance, media visibility and economic revenues of football teams. A similar empirical analysis was then adopted to explore the case of Formula One drivers, revealing some different behavioural and managerial patterns in the two global sporting industries.

Future extensions of the paper may include exploring topics like: the relationship between outcome uncertainty in sports competitions and degree of interest among supporters and the media; a detailed analysis of the superstar phenomenon; talent concentration and winner-take-all effect; identification of the underlying factors explaining the development of sports business, etc.

### **Acknowledgements**

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## Notes

- 1 The papers by Rottenberg (1956), Neale (1964) and Sloane (1971) clarify the framework in which to analyse sports industries, providing pertinent lessons on good managerial practices. A general view of the football industry and its competitive structure is given by Hoehn and Szymanski (1999). Andreff (2011) analyses and compares the American versus European professional team sports leagues. Frick (2007) studies various aspects on the football industry: transfer fees, wages and other contracting characteristics. An overview of the history and structure of the Formula One industry is found in Jenkins et al. (2005).
- 2 Humphreys (2002), for instance, proposes alternative measures of competitive balance for different sports leagues. Pawlowski and Anders (2012) revisit the issue of outcome uncertainty and stadium attendance. Andreff and Scelles (2014) explore empirically the league standing effect as something different from competitive balance. Scelles et al. (2011) offer an elaborated design of sport leagues in the European context to optimise the competitive intensity (outcome uncertainty) along with marketing and sponsoring efficiency.
- 3 Garcia-del-Barrio and Pujol (2007) recognised a segmented labour market structure in European football, where one segment is formed by few outstanding workers, who accumulate market power, whereas the other operates in a monopsonistic framework. In this context, Lucifora and Simmons (2003) estimate human capital earnings equations of football players in Italian Calcio. Using data on earnings and players' personal characteristics, they test for superstar effects in wage determination by examining the marginal revenue product of the players.
- 4 Gutierrez and Lozano (2014) use financial data and records on performance to assess the relative teams' efficiency in the Formula One World Constructors' Championship. However, although they reach beyond sport performance alone, the authors neglect sources of revenues other than the performances of drivers and constructors.
- 5 The debate on the frequency at which news articles of football players and Formula One drivers are associated to negative rather than positive opinions is often a matter of discussion with colleagues. Several qualitative studies were conducted to address this issue, concluding that negative contents in news articles are more the exception than the rule. The percentage of negative news articles in football represented only 6% (or up to 12% in the less favourable cases), meaning that most of the football players (above 90%) enjoy a positive perception. Moreover, the proportion in Formula One is even better: only between 2 and 6% of the articles were negative (when examining other groups presumably more vulnerable to criticism – such as the managers of football clubs and national teams – the conclusion is even more positive: their presence in the media received generally a favourable assessment, often above 95%). In conclusion, apart from exceptions our methodology is valid as players' and drivers' perception is largely positive.
- 6 A similar methodology was applied to derive appraisals of media value ratings in other professional sports: basketball (NBA, ACB and World Cup), golf, tennis, among others. Among the papers that apply this approach are: Garcia-del-Barrio and Pujol (2007, 2009, 2015). Some studies examine the impact of mega-events; like for instance: 'Informe MERIT del Valor Mediático en el Fútbol Profesional (2011/12): Tasación mediática y económica de futbolistas y selecciones' (available at: <http://www.uic.es/progs/obj.uic?id=51b739f849845>).
- 7 They argue that football clubs usually act as win maximisers rather than as profit maximising agents. Also, Garcia-del-Barrio and Szymanski (2009) provide evidence of win maximising behaviour in both the Spanish and English leagues. The English market was examined by Szymanski and Kuypers (2000); and by Szymanski and Smith (1997), who proved that few English teams averaged profits and that even in those cases the profits were small.

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