



**Recruiting talent in a global sports market: Appraisals of soccer players' transfer fees.**

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## Recruiting talent in a global sports market: Appraisals of soccer players' transfer fees

### Introduction

Professional soccer develops its business, alike other global entertainment industries, on the basis of the talent of individuals. This paper presents a valuation method to appraise talent and to determine the “theoretical” transfer fees of soccer players through a method based on media visibility records. Thus, the scope of the study is related to investment decisions and their financial implications in managing professional soccer teams and leagues.

To identify talent and evaluate the players' economic value we apply the “*Methodology for the Evaluation and Rating of Intangible Talent*” (MERIT) approach, which appraises sport (on-field) talent along with the other (off-field) abilities of players that people find attractive. Media visibility figures are then used to estimate the “predicted values” of the transfer fees to be paid for recruiting soccer players. Given that the individuals' talent determines their teams' sport achievements, the transfer fees' market has become a major sector within the soccer industry (Pawlowski et al., 2010).

Our analysis relates to the management of global talent, as soccer clubs often incorporate non-local human resources to improve either sport performance or economic returns (or both).<sup>1</sup> An important source of gains resulting from an international workforce is the team effect linked to diversity in skills, which is supposed to be fostered by the multicultural origin of the team members. International working teams are usually more powerful than national teams, because the sum of individual talent is always higher if no limits are imposed to international mobility and competition for talent (Farndale et al, 2010). Soccer teams, insofar as they aspire being or becoming global brands, tend to build workforces with a large number of international players, despite the shortcomings in terms of human resources management (HRM) imposed by a greater diversity.

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<sup>1</sup> As stressed by Beltrán-Martín and Bou-Lluser (2018), who adopt a comprehensive approach to examine employees' team-work contribution, research on human resources management (HRM) has paid special attention to studying procedures through which HRM practices may affect the workers' performance. Wolfe et al. (2006) discuss on HRM practices based on baseball experiences, which could be also implemented in other contexts.

Nevertheless, developing a procedure to assess the contribution of workers is a difficult task. The hiring of human resources is actually among the most crucial activities in which organizations engage (Treadway et al., 2014); a claim that applies to sport teams too. Researches who address hiring decisions in professional sports recognise the difficulty of identifying talent and accurately appraising the workers' productivity (Cf., Berri and Simmons (2011), who study the case of NFL players).

Adopting the right decisions in recruiting players requires realizing accurate evaluations of their global talent. Actually, players' skills may be considered the main asset for soccer teams to achieve economic returns from sport spectacle. In this paper, the evaluation of players sport ability is made without neglecting their skills as media leaders, thereby taking into account the overall economic contribution and the implications for the business development.

### ***Distinctive characteristics of the soccer industry***

The soccer industry is characterised by a number of features related to managerial and financial aspects. Some data will inform about the economic context and size of the business. According to Deloitte ARFF (2019), total revenues of European soccer in 2017/18 are estimated in about €28.4 billion. The share of the European market is dominated by the "Big-5" leagues (England, France, Germany, Italy and Spain), whose cumulative revenue that season totalled €15.6 billion. Among the European domestic leagues, the Premier League achieved the highest revenues.

Nevertheless, despite the substantial revenues amassed by European leagues, soccer clubs often face financial difficulties as they make no sustained profits. The cause behind this problem seems to be that the clubs usually act as win rather than profit maximizing agents. This feature is largely studied: Sloane (1971), Késenne (1996), Szymanski and Smith (1997), and Garcia-del-Barrio and Szymanski (2009).<sup>2</sup>

Given that our approach encompasses sporting performance (implicitly captured through the media value index) with other types of talent (like popularity), sporting contribution of players' is actually

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<sup>2</sup> Some papers may help to better understand the scope of our study. For a general view of the Soccer industry, Hoehn and Szymanski (1999); for a discussion on the structure of sporting competitions, Szymanski (2003); for a description of market situation and investors in the "Big-5" leagues in Europe, Rohde and Breuer (2017). Earlier, data availability on players' contracts invited researchers (Cf.: Frick, 2007) to study the evidence on transfer fees, salaries, contract length, mobility, etc.

considered a major factor in determining the player's economic valuation. Moreover, previous empirical studies (Cf.: Garcia-del-Barrio and Pujol (2007) and Garcia-del-Barrio, 2018) show that sport talent is already captured by media visibility ratings and, hence, it is not necessary including into the empirical model direct measures of sport performance.

Another distinctive characteristic of sport industry is the presence of winner-take-all effects, as exposed by Frank and Cook (1995). Professional sports, including the market for soccer spectacle, are characterized by the fact that being marginally better than other competitors results in a reward that is more than proportional to performance. This phenomenon also affects other industries like motion picture or music, where the market leaders receive salaries out of proportion to their productivity. Rosen and Sanderson (2001) refer to the winner-take-all issue as something increasingly present in many labour markets. This feature explains also that high concentrations of media exposure entail deviations from the expected patten regarding sport talent, but also the distributions where a few number of individuals monopolize the interest of the mass media. The issue is also related to the phenomenon of superstar players Rosen (1981), whose appearance has been explained by referring to sport talent, but also linked to externalities of popularity (Adler, 1985).

Rosen and Sanderson (2001) also claim that the winner-take-all phenomenon is actually present in sport labour markets, characterizing an increasingly number of activities. This feature often results in inefficient investor behaviour in the arms race to hire players with the status of superstar. Besides individuals with normal talent, the soccer players market comprises a few individuals with extraordinary abilities. The unique skills, which only a few players possess in such high degree, bestow them the status of media stars, allowing them to benefit from the winner-take-all effect. Many clubs will engage in a fierce competition to hire these few outstanding players, who will then benefit from having tremendous bargaining power.

This feature is congruent with the evidence that there is high media concentration in the distribution of soccer talent, as a small number of individuals monopolize the attention in the media. According to our analysis, 10% of the players account for half (50%) of the global media visibility in the soccer industry. The presence of winner-take-all effects is precisely another feature that suggests exploring economic valuation methods based on popularity and media visibility.

### *International work teams in soccer*

Professional soccer leagues are increasingly prevalent within the business of professional sports competitions, which are part of the entertainment industry. According to Matheson (2017), professional soccer is the most popular sport worldwide; especially in Europe, Latin America and Africa, but also in some parts of Asia. Insofar as soccer brands become global, their sources of income are less dependent on gate revenues (stadium receipts from local matches); instead, their income derives increasingly from merchandising, sponsorship and broadcasting contracts. Sandvoss (2003) argues that, by attracting the support of global audiences, soccer is a major driving force to draw the interest of sponsorship companies, and to influence the signing of broadcasting contracts. Hutchins and Rowe (2012) identify sports as a key element in online media and stress the role that new communication channels and digital media have on the provision of sports entertainment. To illustrate these aspects, Table 1 reports the annual total and broadcasting revenues of each of the “Big-5” domestic soccer leagues.

\*\*\*\*Table 1 near here\*\*\*\*

Some specific characteristics of sports and, more specifically, of soccer clubs and leagues, recommend creating international work teams. This is due to some singularities related to the fact of being a global spectacle. Sport competition success is a major driving force to transform popularity among international fans into economic returns; but the interest of fans from multiple origins can often be dependent on the presence of international stars playing in a particular team or league (who aspires to become a global brand). Actually, the local interest is expected to increase drastically if a global brand team hires a local soccer player. They immediately become local heroes, especially if the respective domestic league is weak. Thus, a way for global soccer brands to improve their international exposure and to conquer new markets is by hiring soccer players from international origins. The strategic decisions behind the hiring of international players, and the marketing and business-oriented motivations, may be interesting aspects to be examined in future research.

**Methods and data**

Measuring individual talent and being able to translate this talent into productivity entails indeed methodological and empirical challenges, especially in the context of certain industries. Concerning sports, their distinctive characteristics allow us addressing questions that would be difficult to answer in the context of other industries.

*Economic valuation of professional soccer players*

Investing in sport talent and popularity plays a major role in the soccer business industry. In this paper we describe a method for measuring players’ talent and for evaluating the impact of sport talent on the capacity to attract media attention, which eventually explains the economic returns.<sup>3</sup> Actually, we consider at front payment agreements, in the form of transfer fees, as investments decisions for recruiting talented soccer players, from which soccer teams expect obtaining economic returns.

Then, our purpose is precisely showing how players’ skills can be measured and how the appraisal of soccer players’ talent relates to their economic valuation in the market. To achieve this goal, we first describe a methodology based on media visibility, and then we apply it to estimate the market value of soccer players’ transfer fees.

Remember that the main purpose of this paper is measuring the economic value of a skilled type of workers: the professional soccer players. In this peculiar labour market, the clubs compete to hire talented players, and the players try to obtain the greatest possible rewards. In order for individuals to change team within contract, the move entails a transfer fee paid to the selling team by the buying club; whereas they act as free agents if the contract has already expired. Actually, the introduction of the “Bosman Law” (enacted by the European Court of Justice in 1995) enabled players to move freely to other clubs in the European Union. After 1995, once the restrictions on cross border transfers of players were uninhibited, the best players typically sign contracts with the highest wages and transfer

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<sup>3</sup> There are many studies on the economic returns of talent investment. Among the papers focused in soccer, Chang and Sanders (2009) show, for instance, that investment in sport talent is negatively affected by revenue sharing, as the smaller revenue teams do not spend the shared income to increase talent investments. To prevent damaging the league competitive balance, the authors recommend combining pooled revenue sharing systems with minimum payroll requirements on players. The topic falls however beyond the scope of our paper.

fees. Establishing an economic compensation for hiring professional soccer players, unless the player had finalized his current contract with the club, seems mandatory under the current rules in soccer.<sup>4</sup>

Attempts to measuring the players' contribution to their teams, leagues and to the whole business of soccer have typically been restricted to measuring sport performance. Moreover, most of the appraisals to the theoretical value of players are assumed to be determined on the expectation of present and future sport achievements, which are actually predicted on the bases of past records.

Researchers usually estimate the players' theoretical value by means of individual indicators of sport performance, along with variables related to certain characteristics of players and teams. This type of approach was applied to soccer too, like in the works by Horowitz and Zappe (1998), Berri (1999) and Dobson and Gerrard (1999). Moreover, the first paper acknowledges that the literature generally accepts that players' rewards in sport labour markets are solely based on their sporting performance. In addition to individuals' characteristics, Dobson and Gerrard (1999) examine the impact of certain characteristics of the buying and selling clubs.

In a recent paper, Müller et al (2017) claim that accurate figures of players' market value and transfer fees are obtained by estimating a model based on objective indicators of players' performance and players' characteristics, although they also include a measure of popularity. Previous research (Deephouse, 2000) argues that reputation in the media is a relevant factor to expand competitiveness and to improve performance. Actually, intangible assets (like popularity and reputation) are essential elements in modern industries of professional sports. Popularity, based of course on collective sport talent and performance, is the main driver of income in professional sports.

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<sup>4</sup> The transfer system is the mechanism for retaining and hiring talent in the labour market for soccer skills, which presumably prevents too heavy concentration of sport talent into few numbers of clubs (Cf.: Stewart, 1986). Some previous papers deal with legal aspects of the transfer system. Feess and Mühlheuser (2002) examine the effects of different "transfer fee" regimes by comparing the system applied until the Bosman law of 1995 and other proposals by the European Commission. Dietl et al (2008) stress that transfer fees, despite having long tradition in sport markets, came under attack with the Bosman ruling. Besides, regulations approved by UEFA (on club licensing and financial fair play) may alter the future situation. Andreff (2011) compares American and European professional sports leagues and gives some insights on the role of regulations. Franck (2014) provides a general description and discusses potential advantages and shortcomings derived from the new rules.

The attempt of assessing overall intangible talent and economic value of soccer players by estimating the “market value” of transfer fees is promising.<sup>5</sup> In this regard, a major aspect is noticing that sport performance is implicitly captured through media visibility ratings, which successfully accounts also for the off-field skills of players (Garcia-del-Barrio, 2018). Both types of abilities, in-field and off-field skills, bring forth potential economic gains to the teams and are jointly captured through the media visibility scores, a feature that makes redundant using direct measures of sport achievements.

Models based solely on sport performance may be of little help to practitioners, who seem to establish the actual transfer payment depending on the economic power of seller and buyer clubs, and on the bargaining ability of the player’s agent. Moreover, transfer fees agreements are often established on the bases of the available information on payments made in the past for players with similar characteristics. In contrast with that, the valuation approach proposed here evaluates the players’ value on the grounds of the information driven by the interest of fans and the general public.

Some recent approaches look for determinants of economic valuation other than direct measures of sport skills and performance, in line with our own proposal. Herm et al (2014), for instance, use sport talent along with other non-sport related predictors (that they called external determinants) to estimate the market values of soccer players. Their paper relies on records of players’ market values derived from the fans’ ratings obtained from the on-line community transfermarkt.de web site. Also Franck and Nüesch (2012), using data on German soccer, provide evidence that both sport skills and popularity significantly contribute to players’ market values. They actually examine citations on press as a measure of media visibility and further distinguish between on-field and off-field related news articles. More recently, Korzynski and Paniagua (2016) claim that sport talent is not the only factor to explain sports star’s market values: *“Some gifted players are undermined by weak media exposure while some less talented players who actively engage in social media and attract fans in millions*

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<sup>5</sup> Previous papers (Cf.: Seo and Kim, 2020) argue that investing in intangibles assets is not inefficient to improve firm performances and value for a variety of company types. Besides, given the increasing size of the players’ transfer fees, hiring decisions may threaten the financial sustainability of clubs (Mourao, 2016).



*benefit from exorbitant contracts.*” Their comparative qualitative approach though, even if interesting, has a different scope than our empirical analysis.

In summary, we argue here that “transfer fee” payments in soccer can be mainly explained through variables capturing the media value status of players and teams. According to this view, our empirical analysis is carried out including just a few other explanatory variables in addition to media visibility appraisals. Moreover, given that sport talent is already captured by media visibility ratings, we exclude direct indicators of sport performance; a choice that allows us avoiding multicollinearity problems and bias in the estimated coefficients.

The following section describes in more detail the basic methodological aspects of our study by explaining step by step the process for estimating the players’ market value. More specifically, by applying linear regression techniques we translate individual in-field and out-field talent, and their expression in media visibility, into economic terms.

### ***“Media visibility” methodology: measuring talent and productivity***

The scope of this paper is ambitious thanks to the MERIT approach. This section summarizes the main aspects of this methodology. Using an extensive and comprehensive database, we compute ~~results-indexes~~ and rankings by examining the media visibility of a large number of players and clubs.

Media visibility refers to ~~the level~~ mass media exposure; ~~or the~~ degree of attention that the media bestows to soccer players and teams. It is captured through the number of news articles provided by Internet search engines, such as Google News, from media sources around the world.

The search procedure is always made following the same guidelines: search strings are defined by concatenating terms: the "player name" followed by the "club name". Data collection to calculate the MERIT index is based on the relative number of mentions, regardless of what the content or source of the news is. Recent papers applied a similar method to examine different aspects of the entertainment industry in tennis (Garcia-del-Barrio and Pujol, 2015) or soccer (Garcia-del-Barrio, 2018). For more detailed information on this method and its results, see the web page: [meritsocialvalue.com](http://meritsocialvalue.com)

The underlying hypothesis of our model is that the degree of visibility in the media reflects the effect of sport performance game after game. In line with previous empirical studies (Cf. Garcia-del-Barrio

and Pujol, 2007) we theoretically assume that direct sport performance indicators are already captured by means of the media visibility ratings and, therefore, there is no need for them to be explicitly included in the explanatory model.

The outcomes of this paper are the result of analysing the evolution over time of the exposure in the media of more than 5,000 soccer players of more than 200 clubs. The calculations are made upon a data set comprising the players registered in the main European domestic leagues (England, Spain, Italy, Germany, France, Portugal and the Netherlands), as well as players that participate in the UEFA Europa league and UEFA Champions League and the leagues of Argentina and Brazil. The index of media visibility is the score given to individual soccer players, computed with respect to the average of the top 2,500 players included in the aforementioned data set. The media visibility score is the factor by which the number of appearances in the media of a player multiplies the number of news articles of the representative (average) player in our sample.

Notice that the relevant piece of information is not the absolute number of news articles counted, or the level of attention an individual receives on the Internet, but the comparative position with respect to other players, who are competitors at attracting audiences. The media visibility index is thus calculated in a way that permits performing homogenous comparisons across individuals and over time. Then, on the basis of individual media visibility appraisals, we are also able to derive aggregate figures of the media visibility for a group of players, which allows us to legitimately comparing the media status of teams and leagues. Moreover, if the characteristics of the sport competition calendar are similar, and the searching periods to collect data are properly defined, this approach also permits making homogeneous comparisons across different sport disciplines.

Once the comprehensive players' skills (including both in-field and off-field talent) are measured through their media visibility ratings, we address the main goal of the paper: calculating the "market value" of the transfer fees paid to hire professional soccer players. To obtain the estimated "market values" of the transfer payments made for hiring the players' services, we estimate regression models with actual transfer fees as dependent variable. Available data on the transfers actually paid include 1,083 observations of players who changed team in the considered transfer windows.

### *Media visibility in soccer*

As it was already explained, the media visibility index is defined as the factor by which the value of a player multiplies the number of news articles of the representative (average) player in our sample. To illustrate this point, Table 2 shows the results of some top players.

\*\*\*\*Table 2 near here\*\*\*\*

In 2010/11, for instance, Messi received an exposure in the media 36.4 times bigger than the attention paid to the normal player (average from the 2,500 individuals). Similarly, in season 2013/14, Ronaldo multiplied by 37.9 the media visibility of the representative player. The status in the media of these superstar players is far ahead of the others, a feature that is not surprising in markets affected by the winner-take-all element.

In addition to the main explanatory variable (the individual index of media visibility), our empirical analysis includes as well other regressors that are relevant for estimating the “market value” of players’ transfer fees. We refer now to other variables that are also related to the media visibility.

First, we examine the media visibility ranking of soccer teams. To calculate the media visibility index of a soccer club we aggregate the individual media visibility index of the 15 players in the team who are more often mentioned in the media. Of course, the choice of this procedure does not mean that the economic value of a soccer club is necessarily the mere aggregate figure of these fifteen protagonists, but it provides a good approximation of the degree of visibility of a team at the given period. (The number 15 responds to the rationale that media visibility tends to escort those who participate more frequently in matches: the starting eleven plus four other players who are usually called up to play).

To illustrate this point, Table 3 shows the ranking of teams with greatest media visibility ratings of the four seasons running from 2010/11 to 2013/14, both included.

\*\*\*\*Table 3 near here\*\*\*\*

Our methodology permits also carrying out a comparative analysis of the main domestic soccer leagues as far as media visibility status is concerned. The score given to each league is thus obtained by applying a similar aggregation procedure than the one used for teams: to obtain comparable figures

across leagues, we aggregate the media visibility individual index of the 400 most relevant players registered in each domestic competition. (Similar results are found for 500 individuals). Our results reveal the hierarchy among them, which is summarized in Table 4 by expressing in percentages the share of each league with respect to the total visibility in the media accumulated by the “Big-5” domestic soccer leagues.

\*\*\*\*Table 4 near here\*\*\*\*

The exercise of examining the comparative relevance of different soccer leagues is pertinent, because the fact of belonging to a certain domestic league entails significant variations in terms of media visibility (there is a “premium” associated to being hired by a team that participates in a better league). In this regard, the Premier League has historically occupied a position of privilege in the world of soccer, which is reflected in a substantial visibility in the media and in the annual revenues. Another variable related to media visibility that affects the economic value of players is the media visibility share that individuals accumulate in their own team. The media visibility share of the main player typically ranges between 20% and 40% of his team’s overall media visibility.

*Other relevant determinants of the Market Value*

In addition to the different set of variables related to media visibility, there are also other types of variables that deserve our attention, since they affect the appraisal for hiring professional soccer players. According to our approach, only those aspects not directly related to sport performance must be now taken into account, since sport productivity is already implicitly captured through media visibility ratings.

We first examine the age (and experience) of a soccer player.<sup>6</sup> In the estimations, the functional form appropriated for introducing “experience” into the statistical model is in quadratic form: a positive

<sup>6</sup> Concerning soccer players’ age, Helsen et al (2005) disclose an interesting feature: they find empirical evidence that youth players who are relative older than their peers (as they were born from January to March) appear statistically over-represented. They argue that this finding is due to the fact that the group of early born players are more likely considered as “talented”, which may be presumably the result of the crucial effect of having greater physical strength at early age-category competitions.

coefficient that multiplies the years of experience, and another, statistically negative, for the square of those years. This is the usual procedure (Lehmann and Schulze, 2008; and Bryson et al., 2012) given that one may expect that increases in productivity reach their maximum – maturity level – as players advance in age and thereafter suffer a decrease. Professional sport is no exception, even if the decay occurs earlier than in other professions. Too young players have higher risk concerning their future performance as compared to mature players. Besides, sport performance is expected to diminish when a player becomes older than the maturity threshold.

The theoretical predictions are in accord with the behaviour we observe from our estimations. The decline in the increase in a player's value begins when he is 26 or 27 years old. From that moment on, player's additional age leads to an increase (in his market value) that grows smaller each time until the moment when the player's age of 32 or more begins to weigh negatively on their economic appraisal.

Notice also that there is no need to control by characteristics like the players' position in the pitch, since they are already implicitly accounted for through the media visibility ratings. Of course, pitch position affects the transfer fee, but this effect also alters our media visibility index and, thus, information on field position is no needed.

## Results

In this section we estimate linear regression models using as dependent variable the actual transfer fee paid for hiring players. We include those contracts signed in the winter transfer window, while excluding the cases in which no payment was made. The information on transfer fees were obtained from the Web site: [transfermarkt.de](http://transfermarkt.de).

### *Model estimation*

The econometric analysis is performed to identify the factors that determine a soccer player's "market value" and to ponder their respective weight. To predict the players' transfer fees, a number of variables are statistically significant; namely: individual media visibility status, media visibility share of the player within his team, contract duration, economic and media status of the hiring team, years

of experience (in quadratic form), player’s age at the end of the contract, the domestic league of the hiring team<sup>7</sup> and the transfer window at which the contracts were signed.

The estimations were carried out on a data set comprising five seasons: from 2010/11 to 2014/15, both included. In addition to the pooled model, we show the results of running separate regressions for each season. This is a reasonable choice since the estimated market values of transfer fees were based on the available observations in the respective year. The estimated models yield high goodness of fit and statistically significant estimates for the main explanatory variables. Overall, our results indicate a high explanatory power of the model and very consistent results. Moreover, the similarity of the estimated coefficients over the seasons corroborates that the outcomes are robust and prompt us to place trust in our valuation method and results. Tables 5 and 6 summarize the basic statistics of the variables used in the estimations.

\*\*\*\*Table 5 and Table 6 near here\*\*\*\*

Our empirical results are in accord to previous studies as they support that sport performance is well captured through media visibility ratings (Cf. Garcia-del-Barrio and Pujol, 2007). Furthermore, the media visibility index is able to measuring players’ contributions beyond their sport talent. This is precisely a distinguishing feature of our methodological approach. Besides, one of the virtues of the chosen approach is its appropriateness to carry out homogeneous comparisons of the sport contributions of individuals who play in different positions in the pitch.

Table 7 shows the results of the pooled model, while Table 8 displays the estimators for each of the four seasons under analysis. The tables incorporate marginal effects, which reveal that “Contract duration” and “Media visibility index” are the most relevant variables to determine the transfer fees.

\*\*\*\*Table 7 near here\*\*\*\*

The results of the regression for the whole sample (Model 1, in Table 7), are replicated for a smaller sample (Model 2), in which only transfer fees above 2.4 Million € were considered. The latter

<sup>7</sup> Kirschstein and Liebscher (2019) show that the status of the team in which individuals play may be an important driving force to affecting the players’ market value.

estimation was made to verify the soundness of the estimators (since, as shown in Table 6, the sample for seasons 2010/11 and 2011/12 comprised contracts whose transfer payment was as little as 0.5 Million €, while the minimum transfers considered in the two other seasons started at 2.4 Million €). Then, Table 8 shows the results of the separate estimations made for the four seasons between 2010/11 to 2013/14. In all the cases, the goodness of fit coefficient is high, indicating that the model's predictive power is also high. Besides, the statistical analyses and estimations result to be very consistent over time: actually, the estimated coefficients reported in Table 8 yield similar results in the four cases.

\*\*\*\*Table 8 near here\*\*\*\*

The similarity of the estimations over the seasons is a guarantee of the model's robustness and the validity of our results. Moreover, we find the expected signs of the estimated coefficients, which supports the consistency of our methodological approach.

### ***Main findings***

In the following paragraphs we examine the variables that are statistically significant to explain the market value of the players in the soccer industry. Among them, as was already anticipated, the main ones are related to media visibility status, measured through two variables: the individual visibility index (values obtained following the MERIT procedure, like the ones reported in Table 2) and the share of media visibility expressed as the percentage that the player represents within his team.

The empirical analysis leaves little doubt about the central role of the media visibility ratings, which is evident from the fact that the corresponding estimates are statistically significant. It also corroborates that, in assessing a soccer player's overall economic contribution, it is redundant to introduce direct indicators on player's sport performances, since they were already implicitly captured by the media visibility ratings: The media visibility reflects what happens on the playing field and translates it into media coverage and popularity. Furthermore, the media visibility ratings successfully capture features that transcend mere sport and are relevant to capture the economic dimension of a player.

Having addressed the principal issue, we next examine other variables that are relevant to our goal. In particular, we look at the extent to which media visibility of buying and selling teams may influence the effective transfer fees. (To our knowledge, there is little literature on this specific matter. However, Ribeiro and Lima (2019) examine the wages of soccer players who change team, finding a wage premium associated to being transferred to a club belonging to a higher division league, and a wage penalty in the case of moving to a lower division).

We expect – and the empirical analysis verifies – that the greater the media visibility of the buying club (and its economic power), the higher the price paid for a player, for a given level of media visibility. This result means that the most popular teams will have to pay a premium to hire new players, which seems paradoxical: the higher is the buyer’s media exposure and economic power, the lower its bargaining power becomes. This fact is better understood if taking into account that top clubs compete with each other attracting struggle to each other for attracting top superstars. This phenomenon, well-known in the literature, recognizes the existence of increasing marginal costs in hiring sport talent, which is not surprising in a non-discriminating monopsony framework (Késenne, 2014, p. 108) and even less when the supply of superstar talent is scarce (Sloane, 2006).

A complementary explanation of this feature relates the internal rationale of the media visibility dynamics. The high exposure of a club will revert into an increase of the media visibility of the player. The economic returns associated to media visibility status will be better exploited in teams with high levels of media visibility than in teams with a poor media visibility status. The former type of club is thus willing to pay a higher premium for the player than the latter, due to its capacity to generate a larger future income.

The influence exerted by the media visibility status of a team on the players’ transfer valuation has an important implication: there is not a single theoretical market value for a player, but an interval of prices depending basically on the status of the potential teams that fight to hire the player’s services. In other words, to be rigorous, the theoretical transfer fee of a soccer player cannot be given by a unique value. The divergences in popularity and economic status of teams imply that an interval of prices, rather than a single price, must be defined.



Regarding the regression analysis of season 2013/14, we were able to obtain data on how long it was the remaining time before the current contract of the player would expire. This variable was introduced in the regressions by means of four dummy variables. The significance levels of the corresponding estimators indicate that a penalty in terms of economic value is found for players whose contract has already expired or is about to expire within a year. On the contrary, the empirical analysis indicates that the value of players whose current contract will last three or more years is associated to an economic premium.

## Discussion

This paper's contributions are materialized in the context of modern professional soccer, part of the entertainment industry. Our original valuation approach is proposed as a useful tool for identifying and measuring global talent in soccer. Our research findings lead to recognise as distinguishing features the on-field and off-field soccer players' talent, each of which contributes in some way to the soccer industry. We disclose that both sport and non-sport skills of players are valuable assets on which to develop business projects.

## *Summary of the results*

In this paper, we use an index of media visibility to capture both in-field and off-field talent of soccer players. Then, based on this innovative measure of players' performance, we argue that sport talents as well as other non-sport-related skills of players are treasured assets on which to develop the business. In other words, the overall economic contribution of players strongly depends on their skills as media leaders as well as on their sporting talent. Accordingly, we incorporate into the empirical analysis ratings on the players' media exposure to achieve a more comprehensive appraisal, which we may enrich the scope of the analysis.

We further claim that the indexes of media visibility ratings provide essential information for establishing a comprehensive and all-encompassing "market value" of the soccer players.

Actually, the empirical results reported here lead to conclude that something else than just on-field performance explains the economic value of soccer players. Moreover, this paper also provides insights on why clubs and leagues, wanting to become global enterprises, strongly compete to sign the

most popular players, since realizing greater economic returns is easier when having in the team global star players.

Besides, our analysis reveals that the influence of players' media visibility is statistically relevant not just in absolute values but also in relative terms: we find a positive effect associated to increasing the relative share of the players' media status inside the roster of the selling club. In fact, along with individual media visibility scores, there is a statistically significant and positive relationship between the transfer fee actually paid and the share of media visibility that the player concentrates relative to the overall figure of his squad.

Finally, according to our findings, in order to achieve fair appraisals of the players' transfer fees, not a single value but an interval should be defined. This is due to the fact that the higher the media visibility status of the buying team, the higher the actual transfer fee paid for the player. This feature is congruent with top teams fiercely competing for a small number of very top players. This also reflects that financially powerful clubs are more capable to generate greater economic returns from the players' media visibility, thereby allowing them to pay an additional price premium.

### ***Reliability of the estimations***

To judge the predictive power of our models, we compare the estimated (or theoretical) transfer fees and the actual fees paid. The empirical results of each of the estimated models display a strong explanatory power. However, there are of course discrepancies between the estimated market value and the transfer fee that was actually paid, a feature that is reflected in the size of the residuals. It means that, at hiring talented players, soccer clubs deviate from the theoretical (expected) behaviour, either by agreeing an overpaid transfer fee or, on the contrary, by paying a fee below market conditions. But it could also be that the omitted variables were responsible for the too large residuals.

The usual discussion in this context is to determine to what extent the predictive power of the model may be improved by including additional explanatory variables. Of course, deviations of estimated transfer fees from actual payments may result from agreements diverging of the efficient behaviour in the market. Besides, the difference between the market value (based on market conditions) and the actual transfer fee paid may arise from the bargaining power positions of the clubs, the player's agent

negotiation ability or the attitude of the player concerning his interest in the transfer. These circumstances are of diverse nature and something difficult to capture, which hinders internalising them inside a general empirical framework.

In summary, there is not a conclusive way to establishing the extent to which differences between the transfer fees paid and the theoretical transfer fees (as estimated in our model) are due to imperfections of the model or to wrong decisions in the transfer market. Anyway, to judge the deviations from the fees actually paid, Table 9 reports the estimations of the “market value” for the transfer fees of 30 players who changed team during 2013 and 2014.

\*\*\*\*Table 9 near here\*\*\*\*

Notice that the table reports contracts whose transfer payments were above 25 Million €. Column (4) reports the actual transfer payments, in Millions €, that were made by the buying clubs (according to [www.transfermarkt.de](http://www.transfermarkt.de)). Then, in column (5), we indicate the MERIT estimation of the theoretical transfer value. Column (6) shows the difference, also in Millions €, between estimated value and actual payment. A positive number indicates that the buying club has paid less than the fair value to the selling club, while a negative value corresponds to an overpriced deal. The rest of the information in Table 9 relates to other relevant explanatory variables, such as: players’ age, contract duration, etc.

There is another methodological aspect that deserves being reminded about. In line with our analysis and results, and given that sport performance is fairly captured by media visibility appraisals, we advocate that one only need to rely on appraisals of the players’ media visibility to jointly capture their overall contribution and, ultimately, their potential ability to generate economic returns.

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## TABLES

Table 1. Annual Total Revenues and Annual Broadcasting Revenues (Mill. €)

<b>Total Revenues</b>	<b>Ligue 1</b>	<b>Serie A</b>	<b>La Liga</b>	<b>Bundesliga</b>	<b>Premier League</b>
1996/97	293	551	524	444	685
1997/98	323	650	569	513	895
1998/99	393	714	612	577	1,024
1999/00	607	954	722	681	1,219
2000/01	644	1,027	676	880	1,557
2001/02	643	1,017	776	1,043	1,747
2002/03	689	1,042	847	1,108	1,791
2003/04	655	1,052	953	1,058	1,977
2004/05	696	1,219	1,029	1,236	1,975
2005/06	910	1,277	1,158	1,195	1,995
2006/07	972	1,064	1,326	1,379	2,273
2007/08	989	1,421	1,438	1,438	2,441
2008/09	1,048	1,494	1,501	1,575	2,326
2009/10	1,072	1,532	1,644	1,664	2,479
2010/11	1,040	1,553	1,718	1,746	2,515
2011/12	1,138	1,587	1,788	1,869	2,917
2012/13	1,297	1,682	1,859	2,018	2,946
2013/14	1,498	1,700	1,933	2,275	3,897
2014/15	1,418	1,790	2,053	2,392	4,401
2015/16	1,485	1,917	2,437	2,712	4,865
2016/17	1,643	2,075	2,854	2,793	5,297
2017/18	1,692	2,217	3,073	3,168	5,440
<b>Broadcasting Revenues</b>	<b>Ligue 1</b>	<b>Serie A</b>	<b>La Liga</b>	<b>Bundesliga</b>	<b>Premier League</b>
1996/97	95	199	-	111	145
1997/98	137	241	-	143	225
1998/99	164	248	-	168	290
1999/00	343	596	252	212	357
2000/01	326	619	289	399	537
2001/02	333	595	237	414	709
2002/03	357	642	314	365	810
2003/04	306	632	391	291	884
2004/05	344	666	409	321	856
2005/06	524	768	406	325	839
2006/07	565	648	557	480	880
2007/08	557	863	579	476	1,169
2008/09	576	892	621	489	1,134
2009/10	607	905	725	506	1,270
2010/11	607	938	772	519	1,305
2011/12	613	932	789	546	1,469
2012/13	632	993	900	620	1,390
2013/14	605	1,001	949	717	2,104
2014/15	628	1,099	975	731	2,337
2015/16	656	1,190	1,232	933	2,577
2016/17	819	1,244	1,484	854	3,221
2017/18	791	1,294	1,609	1,248	3,210

Sources: Deloitte ARFF (2005-19) | Deloitte ARFF (1999-19) | Soccer clubs' accounts



Table 2. MERIT Individual Index of Media visibility - Seasons 2010/11 to 2013/14

Rank	Player (2010/11)	Team	MERIT Index 2010/11	Rank	Player (2011/12)	Team	MERIT Index 2011/12
1	Lionel Messi	FC Barcelona	36.35	1	Lionel Messi	FC Barcelona	46.60
2	Cristiano Ronaldo	Real Madrid	29.94	2	Cristiano Ronaldo	Real Madrid	36.60
3	Wayne Rooney	Man. United	19.09	3	Xavi Hernández	FC Barcelona	25.40
4	Xavi Hernández	FC Barcelona	17.27	4	Zlatan Ibrahimovic	AC Milan	16.90
5	David Villa	FC Barcelona	15.85	5	Andrés Iniesta	FC Barcelona	16.20
6	Ibrahimovic	AC Milan	15.85	6	Wayne Rooney	Man. United	15.50
7	Karim Benzema	Real Madrid	14.66	7	Karim Benzema	Real Madrid	14.70
8	Andrés Iniesta	FC Barcelona	14.54	8	Robin van Persie	FC Arsenal	14.10
9	Samuel Eto'o	Inter Milan	13.01	9	Iker Casillas	Real Madrid	12.50
10	Xabi Alonso	Real Madrid	12.91	10	Mario Balotelli	Manchester City	12.00
11	Fernando Torres	FC Liverpool	12.39	11	Édinson Cavani	SSC Nápoles	11.80
12	Iker Casillas	Real Madrid	11.70	12	Cesc Fàbregas	FC Barcelona	11.40
13	Gonzalo Higuaín	Real Madrid	11.30	13	Fernando Torres	FC Chelsea	11.40
14	Francesco Totti	AS Roma	10.91	14	John Terry	FC Chelsea	11.30
15	Pato	AC Milan	10.79	15	Gerard Piqué	FC Barcelona	11.20
16	Robinho	AC Milan	10.22	16	Alexis Sánchez	FC Barcelona	11.00
17	Gerard Piqué	FC Barcelona	10.17	17	Marcelo	Real Madrid	11.00
18	Mesut Özil	Real Madrid	10.05	18	Gonzalo Higuaín	Real Madrid	10.90
19	Steven Gerrard	FC Liverpool	10.05	19	Dani Alves	FC Barcelona	10.80
20	Diego Milito	Inter Milan	9.94	20	David Villa	FC Barcelona	10.40
Rank	Player (2012/13)	Team	MERIT Index 2012/13	Rank	Player (2013/14)	Team	MERIT Index 2013/14
1	Lionel Messi	FC Barcelona	33.72	1	Cristiano Ronaldo	Real Madrid	37.89
2	Cristiano Ronaldo	Real Madrid	30.75	2	Lionel Messi	FC Barcelona	24.52
3	Radamel Falcao	At.Mad./Monaco	17.82	3	Gareth Bale	Real Madrid	19.77
4	Wayne Rooney	Man. United	17.48	4	Wayne Rooney	Man. United	16.57
5	Robin van Persie	Man. United	16.85	5	Neymar	FC Barcelona	16.36
6	Iker Casillas	Real Madrid	16.78	6	Sergio Ramos	Real Madrid	15.66
7	Lewandowski	Borussia Dortmund	13.66	7	Diego Costa	Atlético Madrid	15.33
8	Neymar	Santos / Barcelona	13.27	8	Karim Benzema	Real Madrid	12.29
9	Mario Balotelli	AC Milan	12.44	9	Iker Casillas	Real Madrid	12.14
10	Fernando Torres	Chelsea	12.25	10	Mario Balotelli	AC Milán	12.02
11	Arjen Robben	BayernMunich	12.15	11	Manuel Neuer	Bayern München	11.73
12	Andrés Iniesta	FC Barcelona	11.96	12	Robin van Persie	Man. United	10.88
13	Édinson Cavani	SSC Napoli	11.68	13	Mesut Özil	Arsenal	10.18
14	Ibrahimovic	Paris St.Germain	11.16	14	Juan Mata	Chelsea/Man.Utd	9.67
15	David Villa	FC Barcelona	10.94	15	Franck Ribéry	Bayern München	9.43
16	Franck Ribéry	BayernMunich	10.56	16	Ángel di María	Real Madrid	8.91
17	Luis Suárez	Liverpool	10.48	17	Steven Gerrard	Liverpool	8.87
18	Gareth Bale	Tottenham	10.34	18	Fernando Torres	Chelsea	8.80
19	Manuel Neuer	BayernMunich	9.90	19	Luis Suárez	Liverpool	8.73
20	Frank Lampard	Chelsea	9.76	20	Andrés Iniesta	FC Barcelona	8.66

Source: Authors' own calculations – MERIT Data collection



Table 3. MERIT Team Index of Media visibility - Seasons 2010/11 to 2013/14

Rank	TEAM (2010/11)	League	MediaValue (2010/11)	Rank	TEAM (2011/12)	League	MediaValue (2011/12)
1	FC Barcelona	La Liga	140.6	1	FC Barcelona	La Liga	188.6
2	Real Madrid	La Liga	128.4	2	Real Madrid	La Liga	159.6
3	Manchester United	PremierLeague	88.2	3	AC Milan	Serie A	88.8
4	AC Milan	Serie A	69.8	4	FC Chelsea	Premier League	82.7
5	Inter de Milan	Serie A	60.7	5	Manchester United	Premier League	70.4
6	FC Chelsea	PremierLeague	56.2	6	Manchester City	Premier League	63.6
7	Manchester City	PremierLeague	53.2	7	Bayern München	Bundesliga	61.6
8	FC Arsenal	PremierLeague	51.4	8	Inter de Milán	Serie A	57.9
9	FC Liverpool	PremierLeague	45.5	9	FC Liverpool	Premier League	57.3
10	AS Roma	Serie A	43.6	10	SSC Nápoles	Serie A	57.0
11	Tottenham	PremierLeague	37.6	11	FC Arsenal	Premier League	52.2
12	Juventus de Turin	Serie A	35.5	12	Juventus de Turín	Serie A	45.7
13	Atlético de Madrid	La Liga	32.3	13	AS Roma	Serie A	42.2
14	Bayern München	Bundesliga	29.4	14	Atlético de Madrid	La Liga	39.8
15	FC Villarreal	La Liga	27.2	15	FC Valencia	La Liga	39.7
16	SSC Napoles	Serie A	26.1	16	Athletic Bilbao	La Liga	37.3
17	FC Schalke 04	Bundesliga	25.4	17	FC Schalke 04	Bundesliga	35.0
18	US Palermo	Serie A	24.7	18	Tottenham	Premier League	34.1
19	Fc Valencia	La Liga	24.4	19	Málaga CF	La Liga	29.0
20	FC Everton	PremierLeague	21.2	20	FC Sevilla	La Liga	25.0
Rank	TEAM (2012/13)	League	MediaValue (2012/13)	Rank	TEAM (2013/14)	League	MediaValue (2013/14)
1	Real Madrid	La Liga	134.7	1	Real Madrid	La Liga	162.0
2	FC Barcelona	La Liga	109.7	2	FC Barcelona	La Liga	109.7
3	Bayern Munich	Bundesliga	93.2	3	Manchester United	PremierLeague	87.7
4	Chelsea FC	PremierLeague	91.1	4	Bayern Munich	Bundesliga	78.5
5	Manchester United	PremierLeague	86.9	5	Chelsea FC	PremierLeague	76.1
6	BorussiaDortmund	Bundesliga	62.9	6	Atlético de Madrid	La Liga	64.3
7	Juventus FC	Serie A	57.6	7	Liverpool	Premier League	57.4
8	Arsenal FC	PremierLeague	49.5	8	Arsenal FC	Premier League	57.4
9	Manchester City	PremierLeague	48.4	9	Juventus	Serie A	48.8
10	Paris St.Germain	Ligue One	47.2	10	Manchester City	Premier League	45.9
11	SSC Napoli	Serie A	46.6	11	AC Milan	Serie A	41.5
12	Atletico de Madrid	La Liga	44.6	12	Paris St.Germain	League One	35.2
13	Liverpool	PremierLeague	44.1	13	AS Roma	Serie A	31.9
14	Tottenham	PremierLeague	41.9	14	Galatasaray	Süper Lig	31.4
15	Inter de Milan	Serie A	36.7	15	SSC Napoli	Serie A	30.7
16	Milan AC	Serie A	36.5	16	BorussiaDortmund	Bundesliga	26.0
17	Roma	Serie A	33.7	17	Inter de Milan	Serie A	25.8
18	Valencia	La Liga	27.1	18	Sevilla	La Liga	24.6
19	Lazio	Serie A	23.9	19	Valencia	La Liga	21.8
20	Benfica	Primeira Liga	20.4	20	Benfica	Primeira Liga	21.2

Source: Authors' own calculations – MERIT Data collection

Table 4. Media Value Share of the “Big Five” European Soccer Leagues (in %)

Leagues	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Premier League	33.07	26.73	28.43	29.91	30.58	34.44	37.50	33.90
La Liga	32.17	33.18	32.05	25.28	31.23	34.87	31.10	37.80
Serie A	22.72	23.51	21.79	20.33	20.59	14.24	12.70	12.60
Bundesliga	8.95	10.79	12.08	15.33	12.70	9.46	10.60	9.50
Ligue 1	3.09	5.78	5.65	9.15	4.89	6.99	8.10	6.20
TOTAL	100	100	100	100	100	100	100	100

Source: MERIT social value – Data Collection

Table 5. Summary Statistics of the Main Variables for the Pooled Model

Pooled: Full Sample	Sample	Mean	Std. Dev.	Min	Max
Transfer Fee *	1,083	7.48109	9.98312	0.05	94
MERIT MV index	1,083	1.07582	1.69516	0	14.88
Share MV within team	1,083	5.13556	4.89112	0	38
Winter window	1,083	0.10710	0.30939	0	1
Experience	1,083	7.31671	3.28447	0	17
Experience^2	1,083	64.31210	52.18197	0	289
End of contract age	1,083	27.93692	3.19154	19	39
Contract duration	1,083	3.62020	1.25927	0	6
New team Media Value	1,083	22.85794	27.52905	0	188.60
Premier League	1,083	0.24192	0.42844	0	1

\* Transfer Fees: in Million €

Table 6. Summary Statistics by Seasons

Season 2010/11	Sample	Mean	Std. Dev.	Min	Max
Transfer Fee *	226	5.0994	6.9198	0.05	45
MERIT MV index	226	1.0493	1.2568	0	9.34
Share MV within team	226	5.8066	4.9634	0	29.46
Winter window	226	0.0265	0.1611	0	1
Experience	226	7.4601	3.3771	1	17
Experience^2	226	67.0088	55.2042	1	289
Age at newContractEnd	226	27.7300	3.4438	19	39
Contract duration	226	3.2699	1.4056	1	6
New team Media Value	226	18.0187	23.3320	0.47	140.5
Premier League	226	0.2212	0.4160	0	1
Season 2011/12	Sample	Mean	Std. Dev.	Min	Max
Transfer Fee *	392	4.2682	6.6942	0.05	58.83
MERIT MV index	392	0.7061	1.0857	0	11.42
Share MV within team	392	5.3546	4.3060	0.09	25.45
Winter window	392	0.1198	0.3252	0	1
Experience	392	7.4515	3.3266	1	17
Experience^2	392	66.5637	54.8724	1	289
Age at newContractEnd	392	27.6726	3.2881	20	37
Contract duration	392	3.2211	1.2715	0	6
New team Media Value	392	20.9829	24.1917	0.5	141
Premier League	392	0.2244	0.4177	0	1
Season 2012/13	Sample	Mean	Std. Dev.	Min	Max
Transfer Fee *	205	12.6208	12.5434	3.5	94
MERIT MV index	205	1.80151	2.55655	0	14.88
Share MV within team	205	2.7756	3.2240	0.2	21.4
Winter window	205	0.0878	0.2837	0	1
Experience	205	7.5219	3.1445	0	15
Experience^2	205	66.4195	49.7881	0	225
Age at newContractEnd	205	28.8048	2.9038	20	35
Contract duration	205	4.2829	0.8620	1	6
New team Media Value	205	28.4800	32.5270	0.4	188.6
Premier League	205	0.3365	0.4737	0	1
Season 2013/14	Sample	Mean	Std. Dev.	Min	Max
Transfer Fee *	221	10.6638	12.1051	2.5	81
MERIT MV index	221	1.1105	1.7756	0	13.55
Share MV within team	221	6.4407	6.3305	0.3	38
Winter window	221	0.0361	0.1872	0	1
Experience	221	6.9276	3.2493	1	14
Experience^2	221	58.5022	47.4934	1	196
Age at newContractEnd	221	28.0452	2.9399	22	34
Contract duration	221	4.1176	0.9461	1	6
New team Media Value	221	26.7601	30.7812	1	157.4
Premier League	221	0.2036	0.4036	0	1
Season 2014/15	Sample	Mean	Std. Dev.	Min	Max
Transfer Fee *	39	8.5243	7.5742	2.46	32.3
MERIT MV index	39	0.9333	1.6469	0.02	8.19
Share MV within team	39	4.0948	3.6828	0.5	13.9
Winter window	39	0.9487	0.2234	0	1
Experience	39	6.2564	2.9975	0	12
Experience^2	39	47.8974	39.3431	0	144
Age at newContractEnd	39	26.6153	2.5195	22	32
Contract duration	39	3.3589	1.1807	0	5
New team Media Value	39	18.0820	26.6516	0	157.4
Premier League	39	0.2564	0.4423	0	1

\* Transfer Fees: in Million €

Table 7. Pooled Model (Panel Data - Seasons 2010/11 to 2014/15)

$$TransFee_{it} = \beta_0 + \beta_1 \cdot MeritMVindex_{it} + \beta_2 \cdot ShareMVteam_{it} + \beta_3 \cdot WinterWindow_{it} + \beta_4 \cdot Exp_{it} + \beta_5 \cdot Exp^2_{it} + \beta_6 \cdot AgeContrEnd_{it} + \beta_7 \cdot ContractDur_{it} + \beta_8 \cdot NewTeamMVstatus_{it} + \sum_{t=2}^5 \alpha_t \cdot SeasonDummy_t + \mu_{it}$$

Dependent Variable: Actual Transfer Fee	Model 1 Coeff.	Full sample t-stat	ey/ex	Model 2 Coeff.	Transfer fees t-stat	>2.4 Mill. € ey/ex
MERIT MV index	2.9711360	(7.85)***	0.4272670	2.9911040	(7.79)***	0.3941939
ShareMVwithin team	0.3229267	(3.88)***	0.2216803	0.3718544	(3.75)***	0.2047055
Winter window	0.3357355	(0.37)	0.0048069	1.3129660	(1.16)	0.0156428
Experience	0.7420190	(3.12)***	0.7257143	1.1540500	(3.19)***	0.8249659
Experience^2	-0.0435247	(-3.51)***	-0.3741645	-0.0679972	(-3.59)***	-0.4198705
AgeNewContractEnd	-0.3163191	(-5.62)***	-1.1812410	-0.4382184	(-3.86)***	-1.2150810
Contract duration	1.4860820	(7.80)***	0.7191349	1.9148860	(5.16)***	0.7504114
New teamMVstatus	0.0567658	(4.42)***	0.1734437	0.0531873	(3.92)***	0.1433269
Premier League	1.6625620	(3.29)***	0.0537632	1.9725480	(3.13)***	0.0520561
_control Season2	0.1708557	(0.45)	0.0082665	1.2375980	(1.92)*	0.0283798
_control Season3	4.2249380	(6.33)***	0.1069007	4.1662500	(4.88)***	0.1094149
_control Season4	3.5725630	(6.03)***	0.0974492	3.4628680	(4.53)***	0.0980404
_control Season5	3.5272840	(2.50)**	0.0169790	2.7647920	(1.67)*	0.0138135
Nuber Obs.	1,083			765		
Root MSE	6.0843			6.9328		
R-squared	0.6327			0.5911		
	F (12, 1070)	= 154.13		F (12, 752)	= 159.64	

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

Table 8. Cross-Section Regressions by Season (Estimates for years 2010/11 to 2013/14)

$$TransFee_i$$

$$= \beta_0 + \beta_1 \cdot MeritMVindex_i + \beta_2 \cdot ShareMVteam_i + \beta_3 \cdot WinterWindow_i + \beta_4 \cdot Exp_i + \beta_5 \cdot Exp_i^2 + \beta_6 \cdot AgeContrEnd_i + \beta_7 \cdot ContractDur_i + \beta_8 \cdot NewTeamMVstatus_i + \varepsilon_i$$

Dependent Variable: Actual Transfer Fee	Coeff.	2010/11 t-stat	ey/ex	Coeff.	2011/12 t-stat	ey/ex
MERIT MV index	3.0026710	(5.34)***	0.6179019	3.2769630	(4.10)***	0.5421716
ShareMVwithin team	0.1976451	(2.91)***	0.2250571	0.2610824	(2.16)**	0.3275365
Winter window	-2.719779	(-1.30)	-0.014159	1.1363140	(1.12)	0.0319201
Experience	0.1692431	(0.43)	0.2475934	0.7587124	(2.76)***	1.3245750
Experience^2	-0.015311	(-0.77)	-0.201202	-0.0427406	(-3.22)***	-0.666550
AgeatnewContractEnd	-0.188152	(-2.68)***	-1.023149	-0.2383662	(-3.65)***	-1.545429
Contract duration	1.6321640	(6.47)***	1.0465950	0.9463776	(4.13)***	0.7142092
Newteam_MVstatus	0.0182442	(0.76)	0.0644655	0.0293015	(1.17)	0.1440492
Premier League	0.8504846	(1.11)	0.0368983	2.4244970	(3.55)***	0.1275182
Number Obs.	226			392		
Root MSE	4.0731			4.3499		
R-squared	0.6658			0.5864		
	F (8, 217)	= 36.73		F (8, 383)	= 43.53	
Dependent Variable: Actual Transfer Fee	Coeff.	2012/13 t-stat	ey/ex	Coeff.	2013/14 t-stat	ey/ex
MERIT MV index	2.6083040	(5.32)***	0.3723124	3.0449970	(3.42)***	0.3171102
ShareMVwithin team	0.8344137	(2.66)***	0.1829907	0.2937841	(1.99)**	0.1774398
Winter window	-2.280373	(-1.09)	-0.015864	2.2414490	(0.89)	0.0076088
Experience	1.0957220	(1.36)	0.6530446	1.2639870	(1.91)*	0.8211331
Experience^2	-0.065174	(-1.45)	-0.342992	-0.075343	(-2.05)**	-0.413340
Age at newContractEnd	-0.367266	(-1.42)	-0.838222	-0.347628	(-1.74)*	-0.914244
Contract duration	2.5880320	(2.48)**	0.8782587	2.0100680	(2.85)***	0.7761540
New teamMVstatus	0.0513842	(2.14)**	0.1159528	0.0922590	(3.30)***	0.2315185
Premier League	-0.205438	(-0.17)	-0.005478	2.7553730	(1.94)*	0.0526125
Free-of-contract_Player				-2.713929	(-1.83)*	-0.034547
Years1_currentContract				-2.694720	(-2.48)**	-0.068605
Years2_currentContract				-0.212360	(-0.17)	-0.005226
More3_currentContract				5.1443130	(2.06)**	0.0523883
Number Obs.	205			221		
Root MSE	7.8288			7.3025		
R-squared	0.6257			0.6559		
	F (8, 196)	= 42.00		F (12, 208)	= 38.12	

Statistical significance: \*\*\* p-value < 0.01; \*\* p-value < 0.05; \* p-value < 0.10

(t-statistic) in parenthesis

Table 9. Estimated MERIT “Market Value”. Players transferred in 2013 and 2014

Player	Original Team	New Team	Age	Date of Contract	Contract Duration (# years)	Transfer Fee Actually Paid (in Mill. €)	Theoretical Transfer Fee (in Mill. €)	Difference
			(1)	(2)	(3)	(4)	(5)	(6)
<b>Luis Suárez</b>	Liverpool FC	FC Barcelona	26	11/7/2014	5	81.0	48.13	32.87
<b>James Rodríguez</b>	AS Monaco	Real Madrid	22	22/7/2014	6	80.0	37.86	42.14
<b>Ángel di María</b>	Real Madrid	Manchester Utd.	25	26/8/2014	5	75.0	47.32	27.68
<b>Falcao</b>	Atlético Madrid	AS Monaco	27	01/9/2014	4	60.0	26.38	33.62
<b>David Luiz</b>	Chelsea FC	Paris St.Germain	26	01/7/2014	4	49.5	24.69	24.81
<b>Alexis Sánchez</b>	FC Barcelona	Arsenal FC	24	10/7/2014	4	42.5	24.95	17.55
<b>Eliaquim Mangala</b>	FC Porto	Manchester City	22	11/8/2014	5	40.0	14.73	25.27
<b>Diego Costa</b>	Atlético Madrid	Chelsea FC	24	01/7/2014	5	38.0	56.40	-18.40
<b>Luke Shaw</b>	Southampton	Manchester Utd.	18	01/7/2014	4	37.5	24.05	13.45
<b>Ander Herrera</b>	Athletic Club	Manchester Utd.	24	01/7/2014	4	36.0	16.91	19.09
<b>Romelu Lukaku</b>	Chelsea FC	Everton FC	20	30/7/2014	5	35.4	24.13	11.23
<b>Cesc Fàbregas</b>	FC Barcelona	Chelsea FC	26	01/7/2014	5	33.0	27.62	5.38
<b>Adam Lallana</b>	Southampton	Liverpool FC	25	01/7/2014	5	31.0	19.38	11.62
<b>Griezmann</b>	Real Sociedad	Atlético Madrid	22	28/7/2014	6	30.0	20.92	9.08
<b>Toni Kroos</b>	Bayern Munich	Real Madrid	23	17/7/2014	6	30.0	39.11	-9.11
<b>Gareth Bale</b>	Tottenham Hotspur	Real Madrid	24	01/9/2013	6	94.0	81.31	12.69
<b>Edinson Cavani</b>	SSC Napoli	Paris St.Germain	26	16/7/2013	5	64.5	59.44	5.06
<b>Neymar</b>	Santo Futb. Clube	FC Barcelona	21	01/7/2013	5	57.0	75.45	-18.5
<b>Mesut Özil</b>	Real Madrid	Arsenal FC	24	02/9/2013	5	50.0	45.88	4.12
<b>Fernandinho</b>	Shakhtar Donetsk	Manchester City	28	01/7/2013	4	40.0	8.99	31.01
<b>Lucas Moura</b>	Sao Paulo	Paris St.Germain	21	01/1/2013	4	40.0	22.60	17.40
<b>Mario Götze</b>	Borussia Dortmund	Bayern Munich	21	01/7/2013	4	37.0	46.40	-9.40
<b>Marouane Fellaini</b>	Everton FC	Manchester Utd.	25	02/9/2013	5	32.4	26.03	6.37
<b>Marquinhos</b>	AS Roma	Paris St.Germain	19	19/7/2013	5	31.4	19.50	11.90
<b>Isco</b>	Malaga CF	Real Madrid	21	01/7/2013	5	30.0	27.37	2.63
<b>Asier Illarramendi</b>	Real Sociedad	Real Madrid	23	12/7/2013	6	30.0	21.19	8.81
<b>Roberto Soldado</b>	Valencia CF	Tottenham Hotspur	28	05/8/2013	4	30.0	32.26	-2.26
<b>Érik Lamela</b>	AS Roma	Tottenham Hotspur	21	30/8/2013	5	30.0	17.44	12.56
<b>Mkhitaryan</b>	Shakhtar Donetsk	Borussia Dortmund	24	09/7/2013	4	27.5	7.75	19.75
<b>Stevan Jovetic</b>	AC Fiorentina	Manchester City	23	19/7/2013	5	26.0	26.47	-0.47

Source: MERIT - Authors' calculations.