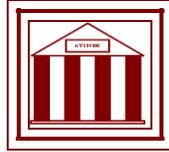


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**Contract Duration and Football
Player Performance: The
Empirical Evidence of Serie A**

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Contract Duration and Football Player Performance: The Empirical Evidence of Serie A

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Abstract

The aim of this paper is to examine the relationship between players' contract duration and their productivity in the professional football. The underlying theoretical ideas related to moral hazard and shirking behaviour. The review of the related literature in sport economics identifies a knowledge gap in relation to European football that is addressed in this paper. Through the development of an econometric model, we explore the links between players' contract duration and their productivity in Italian Serie A. Specifically, the focus of the paper is to see whether or not the length of a contract has an effect of player's performance during the period of that contract. Using an unbalanced panel of 1574 player-observations from the Italian Serie A that cover seven seasons (2000-01, 2001-02, 2003-04, 2004-05, 2006-07, 2008-09, 2009-10), we test the hypothesis whether players performance – measured by the objective player performance index IVG – varies negatively with the number of years left under contract. We found robust evidence that players performance significantly decreases in the last year contract. This finding contrasts with the literature suggesting that moral hazard is widespread in football.

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Introduction

Presumed to perform to their maximum potential in every game, football players are compensated for satisfying fans' expectations. Fans spend a lot of money that clubs invest in players' remunerations according to their contracts. For this reason, clubs' responsibility is to prepare and train players as they want to ensure that they are receiving the best return for their investment.

However, given that effort cannot be monitored exactly, shirking behaviour can occur implying that a player, purposely, does not perform to the best of his ability. Standard theories of asymmetric information suggest that this moral hazard for the club is more likely if a player is paid a guaranteed salary. This suggests that, once a player has signed a long-term contract, he may become lazy and expend less effort.

The specific objective of this paper is to examine whether a player is more productive with a long term, multi-year contract or towards the end of his contract. The underlying question addressed is whether and how the performance of a player should be expected to change if he signs a long-term contract rather than a short-term contract.

Long-term contracts were not common in European football until free agency was developed after the Bosman judgement that led to an increase in the average contract duration (Hubl and Swieter, 2002; Feess et al., 2004; Feess et al., 2010). The type of contract is important because clubs have to pay each player the amount specified in the contract even if a player does not meet the performance expectations, becomes injured and cannot play. Incentive clauses in contracts tend to be only marginal relative to the element of guaranteed pay (Heubeck and Scheuer, 2003; Zibs, 2002). For this reason, clubs should be concerned about whether or not a player shirks and they try to predict future performance before offering new contracts (Krautmann, 1990).

This paper, firstly, reviews the related sport economics literature. Then, it describes the empirical model exploring the relationship between contract duration and player's performance. The last section discusses the results before the conclusion and recommendations.

Literature review

Empirical research of the impact of long-term contracts on performance is often carried out in sectors where jobs are relatively simple and where individual performance measures are readily available (Feess et al., 2010). In this respect, the professional sports sector provides useful sources of data, due to the greater amount of information on performance, contracts and useful proxies for player's ability (Kahn, 2000). Several studies have explored the effect of a player's contract on performance and they have questioned how clubs evaluate players and how they determine contracts.

In order to derive expectations on how contracts affect players, both clubs and players have risk preferences that impact on their decisions. Although clubs have an advantage over their players since they are completely

not able to move freely around leagues, clubs have to balance market and production uncertainties when they decide on the terms of their players' contracts. The contract duration agreed reflects a trade-off between rent seeking and expectations about shirking. Prior to signing, a long-term contract can serve as a potentially powerful pre-contractual incentive device. However, once a long-term contract is signed, the incentive structure changes dramatically because a player's income is now secure until the contract expires. Given the risk of shirking, clubs might prefer short-term contracts though they also involve a higher risk of losing players to other clubs. Conversely, players prefer long-term contracts in order to have a guaranteed income over multiple years. But the contracts also incorporate the risk for clubs associated with uncertainty about players' future productivity. This reasoning leads to the testable prediction that performance should be lower for longer contract durations.

Shirking behaviour is the underlying reason why a player may be less productive under a multi-year contract. He can shirk during the off-season just as easily as he can during the season or he may not put in the necessary training time or eat properly. A longer contract gives more security as it gives a player more opportunity to shirk without losing his salary. However, if this behaviour is detectable, a shirker will develop a bad reputation, decreasing their chance of receiving a long-term contract. The problem for clubs is that they may be unable to distinguish between a less productive year for a player and shirking. Clubs could offer a long-term contract to an average player after he has completed an exceptionally productive season, but after this very strong performance the player could return to his average level of performance. With this uncertainty, clubs need to consider the possibility that shirking is an encouraged by long duration contracts.

More generally, Maxcy (2004) has defined the productive uncertainty of a worker in terms of an employer's uncertainty about how well he performs his jobs in the present as well as in the future. In football, players are likely to receive a short-term contract if clubs are less certain about their future production. For example, young players receive short-term contracts because they have yet to prove how productive they can be for the team. Older players also tend to receive short-term contracts because their productive uncertainty increases with their age as they are not able to perform at the same level as younger players and become more prone to injury. Therefore clubs tend to offer long-term contracts to players in the middle of their careers who have proven they will have consistent productivity.

Clubs also consider the market uncertainty that reflects the ease with which an employer can find a replacement worker who is equivalent to or better than the current worker. Greater uncertainty in this respect could increase the chance of a player receiving a long-term contract because with this type of contract a club protects itself from the risk of being unable to replace the skill level of the player. This is especially true for star players, who are very difficult to replace. These considerations suggest that the players who receive long-term contracts will be those that are the most difficult to replace. The market and productive uncertainties creates conflicting for clubs in contract renegotiations.

The research on opportunistic behaviour in sport has mainly focused on US sports, since the performance metrics that measure player productivity are more widely agreed upon, especially in baseball. Using a sample of the earliest cohort of MLB free agents in 1980, Lehn (1982) examined the effect of long-term labour contracts on player “durability”. He found evidence of opportunistic behaviour. Long-term contracts increase the amount of time spent on the injured or disabled list because guaranteed multiyear contracts reduce the incentives for players to invest in proper physical conditioning. In a later paper, Lehn (1984) distinguished between MLB players that signed for at least three years with the same team and players that signed the same length of contract with a different team. The evidence was that the first group spent more days on the disabled list during the next season. Utilizing a more recent sample of free agent MLB hitters and pitchers, Maxcy et al. (2002) looked for ex-ante strategic behaviour and ex-post strategic behaviour. In contrast to Lehn (1982, 1984), pitchers and hitters spent less time on the disabled list in the season immediately after the end of successful contract negotiations. Moreover, there was no sign of ex-post opportunistic behaviour as performance was not statistically different in the year before or year after the new contract. Playing time was also found to be above the average in the same season after the contract was signed.

Using the same sample of MLB hitters, Krautmann (1999) argued that the observable performance variation was mainly the result of a stochastic process. Conversely, Scoggings (1993) found that evidence of shirking behaviour varied according to the choice of the performance measure and that over some indicators players with long-term contracts exhibited lower productivity in the first year of their contract than in the preceding year. Maxcy (1997) and Fort and Maxcy (1998) also investigated hitters’ and pitchers’ performance. Players with long-term contracts and with the option of re-contracting at the end of the current season did not adopt shirking behaviour. For other players, there was no evidence of shirking when their contract was about to expire.

In NFL football, Gramm and Schnell (1994, 1997) studied long-term contracts of players. NFL players’ average career duration was rather short and for this reason players with long-term contracts were less likely to obtain the benefits of free agency. They were therefore more interested in maximising their current incomes and less likely to go on strike. Conlin (1999) and Conlin and Emerson (1999) used the same database to study long-term contracts in the NFL. Their results indicated that when rookie players signed their first contract after the training camps, the athletic tests over their abilities provided clear performance differentials. However, they also found that effort was influenced by the remaining duration of a contract, the number of games started increased in the last contract year. In another study over long-term contracts, Frick et al. (2002) found evidence that the payment of signing bonuses that were not performance related persuaded free agent players to perform opportunistically; a high percentage of signing bonuses negatively affected team performance.

Two studies on long-term contracts in the NBA reach conflicting conclusions. Stiroh (2007) used contract data and individual player statistics. He found strong evidence of opportunistic behaviour using a composite

measure of player performance. Both performance increases in the contract signing year and performance decreased in the following year. His analysis appears to confirm that there is an ex-ante strategic behaviour hypothesis, but not that players also display shirking behaviour after signing a new contract. In another study on the NBA, Berri and Krautmann (2006) looked for evidence that supported ex-post shirking behaviour. Their evidence refuted the shirking hypothesis and they concluded that findings on whether opportunistic behaviour took place in professional basketball depended largely on the measure of player productivity chosen.

In European football, the empirical analysis of the impact of long-term contracts on performance is very challenging because it is difficult to obtain adequate performance measures. Individual performance on football players is often hard to measure either because of the job's complexity, consisting of many different tasks, the team element in performance or because only specific performance measures such as goals scored are available.

In one of the few studies on the effect of contract duration in European football, Feess et al. (2007) found that player performance in Bundesliga, measured by a subjective overall player rating, significantly increased by 2-3% as the time to contract renegotiation approaches. In a similar study on German football, Frick (2011) investigated player performance and contract duration using the same performance index and the findings confirm the previous empirical evidence. An increase in performance is indicative of a player's attempt to increase effort in order to benefit in the forthcoming contract negotiations. Moreover, this empirical evidence was consistent with team performance increasing when many of the players were in the last year of their contracts and falling when many signed new multi-year contracts. In another study on the German Bundesliga football players, Feess et al. (2010) found negative effect of longer contracts on average performance, since they raise the probability of poor performance but have no impact on the probability of good performance.

Following on from this literature, the main hypothesis under investigation in this study is that, with other factors held constant, contract length has a significant effect on the productivity of a player. Specifically, players close to the end of their contract tend to be more productive than players with a longer duration remaining on their contract. The contribution of this paper to the literature is twofold. First it addresses the lack of evidence in this area in relation to European football. Second an objective measure performance is used as dependent variable in line with Frick (2007) that suggested using players' composite index of performance instead of subjective player performance evaluation.

Data and empirical model

The data set has detailed information on player performance and contract duration of the Italian top professional soccer league, Serie A, during seven seasons from 2000 to 2010 (2000/01, 2001/02, 2003/04, 2004/05,

2006/07, 2008/09, 2009/10). The sample used in this study includes 1574 player-year-observations over 908 players who were under contract.

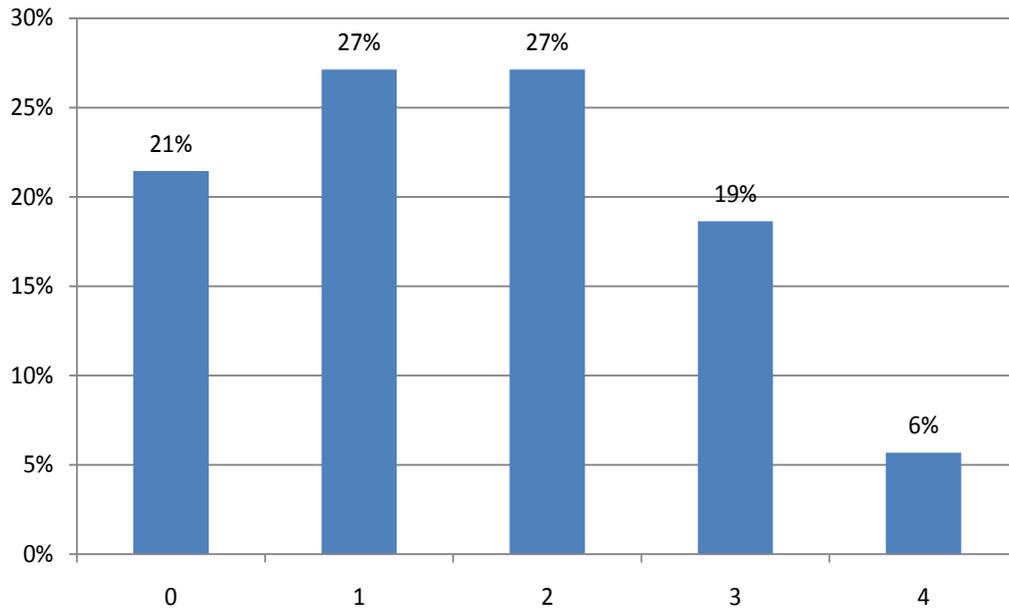
For this study, player performance per season is measured by the composite performance index IVG that incorporates both player specific performance statistics and team factors. This index is an objective measure of performance and proxies a player's effort and contribution to team performance. It is only available if a player has played at least 1000 minutes during a season. Another constraint of the analysis is that the data set only includes published contracts. This means that sample is neither complete nor random and the data set is also an unbalanced panel as the number of years individual players have been acting in the Italian Serie A varies. In table 1, the representation of players in the data set is not the same as the duration of individual careers. If a player does not keep his status as a regular player due to injuries or lack of good performance, he could be excluded for one or more seasons. Furthermore, many players start their career as substitutes and later on manage to become established players.

Table 1: *Representation of players in the data set*

Number of Seasons in Data Set	Individual Players	
	n	%
1	349	38.4
2	230	25.3
3	122	13.3
4	86	9.3
5	72	7.8
6	25	3
7	24	2.9
Total	908	100

Table 1 shows the distribution of contract durations. While 21 percent of the observations are in the last contract year, 27 percent have one year remaining on their contract and 27 percent have two seasons remaining. The mean of remaining contract duration is almost 2.6 years.

Figure 1: The distribution of remaining contract duration



According to Frick (2011), in the case of long-term contracts, players' incentive to perform well increases linearly. In particular, players perform better with two remaining contract years because they reach their optimal bargaining position in the last season prior to the date at which the contract expires. Frick's insight is incorporated in this analysis by constructing an alternative to remaining years as a measure of contract duration. This measure censors the remaining duration at 2 years.

The shirking hypothesis implies that as a contract expires it will have a positive effect on the productivity of a player due to increasing pressure. To improve his negotiating position a player has to prove to the manager, general manager, and owner that he is beneficial to the club over the season prior to contract expiration. Even if the player wants to leave his current club, proximity to the end of the contract will encourage him to perform to the best of his ability so that other teams value him. We therefore also use a dummy variable to indicate players in their last contract year to test whether proximity to contract expiration leads to an increase in productivity.

The empirical model is specified as:

$$IVG = \alpha_0 + \alpha_1 YC + \alpha_2 AGE + \alpha_3 AGESQ + \alpha_4 CGP + \alpha_5 CGPSQ + \alpha_6 MPR + \alpha_7 CGS + \alpha_8 DEF + \alpha_9 MID + \alpha_{10} FWD + \alpha_{11} INTITA + \alpha_{12} INTFOR + SEAD$$

where IVG is the indicator of player performance in season t and YC is a measure of proximity to contract expirations; years remaining YC1, censored years remaining YC2 and a dummy variable indicating that only a year is left on the contract YC3. The other included variables are described below and their descriptive statistics are also shown in Table 2.

Table 2: Descriptive statistics for variables

Variable	Definition	Mean	Std. Dev.
YC1	Remaining Contract Years	1.597	1.175
YC2	Recoded Number of Remaining Years	1.298	.799
YC3	Last Year of Contract	.214	.4108
IVG	Player's performance index	18.292	1.556
AGE	Age	26.95	3.849
AGESQ	Age squared term	740.826	211.512
CGP	Career games played	98.503	91.963
CGPSQ	Career games played squared term	18154.88	32009.2
MPR	Manager's point ratio in Serie A	.368	.205
CGS	Career goals scored	.084	.124
DEF	Defender (Dummy variable)	.33	.47
MID	Midfielder (Dummy variable)	.406	.491
FWD	Forward (Dummy variable)	.19	.393
INTITA	Italian international players (Dummy variable)	.278	.448
INTFOR	Foreign international players (Dummy variable)	.282	.45
2001-02	Season 2001-02 (Dummy variable)	.126	.332
2003-04	Season 2003-04 (Dummy variable)	.125	.331
2004-05	Season 2004-05 (Dummy variable)	.154	.361
2006-07	Season 2006-07 (Dummy variable)	.157	.364
2008-09	Season 2008-09 (Dummy variable)	.143	.35
2009-10	Season 2009-10 (Dummy variable)	.161	.367

The effect of long-term contracts is estimated within the framework of the model causal analysis literature (Angrist and Pischke, 2009; Imbens and Wooldridge, 2009). Simple OLS regressions show the impact that contract duration has on player's performance. Hence, in line with the previous similar studies the causal effect is defined as the difference between potential outcomes in three different treatment states using three measures of remaining contract duration: remaining contract years; censored (at 2) remaining contract years, last contract year dummy. The expected sign of these contract status variables is respectively negative, negative and positive since the expectation is that the higher the contract duration the poorer his performance will be and players perform more strongly as they approach the end of their contracts.

One important variable to control for when evaluating a player's productivity is player's age, AGE (Berri and Krautmann, 2006). Age can proxy for a player's experience and players with more experience should achieve better results. However, age and experience need not guarantee that older players receive longer contracts because, in football, transfer value depreciation is important in the determination of contract length. Moreover, there is an age where a player's productivity begins to decline due to loss of skill or increased probability of injury, and this may cause the player to receive shorter contracts. Therefore the square of age, AGESQ, is also included as an independent variable.

Career goals scored has always been a crucial factor in the determination of players' salaries and transfer fees according to the literature. In this case, the number of career goals scored, CGS, is a proxy of player's career performance and it is expected to be positively related with player's present performance. On the contrary, we decided not to include the number of goals scored during the season as it is endogenous to the dependent variable.

A measure reflecting recent experience is the number of matches played in Serie A during the previous season. As with age, experience will positively affect player's performance but at a decreasing marginal rate. Therefore, CGP and CGPSQ are included in the model.

Other factors can also affect how a player performs on the field, such as the ability of his manager. According to Kahn (1993), the manager motivates players but effectiveness depends on the quality of the manager. A successful manager can have more impact on his players as they will give him more respect and listen to him more attentively than a relatively unsuccessful manager. Therefore, managerial success is expected to have a positive effect on productivity. In addition, a more successful manager is also likely to be a better manager. To control for managerial quality the model includes the manager's career winning percentage for each season and for each player, MRP. This variable is measured by the ratio of points won over the number of available maximum points he could have won throughout his career in Serie A.

Previous research indicates that players with international status perform to a higher level. Here, the term international refers to players that have been selected for their national team. While the dummy variable INTITA records Italian international players, INTFOR indicates international players of other nationalities. We expect a positive sign for these two dummy variables respect to non international players.

Other dummy variables included in our model are related to player's position

(DEF, MID, FWD). The reference group is goalkeepers. Dummy variables for seasons are also included. Following the suggestion of Frick (2011), annual players' salary was included to control for unobserved heterogeneity among players. Nevertheless, its inclusion affected the model specification and lead to problems of omitted variables. Both RESET and Linktest tests were significant and it was not possible to accept the model with the inclusion of player's salary. Ideally, other variables should have been included. For example, some variables could reflect team chemistry, shirking during the off season, attitude, ability to hustle and playing intelligence. Each of these variables would be expected to have a positive effect on productivity. However, the data in order to represent these variables are easily not available.

Results

The results of the OLS regressions are summarised in Table 3.

In Model 1, contract duration, YC1, is measured by remaining contract years. Model 1 has an adjusted R^2 of 0.188 and most included variables are significant. The estimated effect of indicator of contract duration is positively significant indicating that one additional contract year increases performance by 10 percent of performance points. If this was a casual effect, team would be able to increase player's performance by longer contracts which completely contradict the shirking hypothesis. However, measure is probably reflecting the likelihood that better players are given longer contracts.

Table 3: OLS regressions

Variable	Model 1	Model 2	Model 3
	Remaining years on contract measures by:		
	Remaining Years	Remaining Years (censored at)	Final Years-Dummy
YC1	.103 ^{**} (.0357)		
YC2		.171 ^{***} (.056)	
YC3			-.352 ^{***} (.104)
AGE	-.0983 (.073)	-.119 [*] (.072)	-.134 [*] (.071)
AGESQ	.0018 (.0013)	.0022 (.0013)	.0025 [*] (.0013)
CGP	-.001 (.011)	-.001 (.0011)	-.001 (.0011)
CGPSQ	2.74e-06 (2.8e-06)	2.64e-06 (2.8e-06)	-2.74e-06 (2.8e-06)
MPR	.713 ^{***} (.197)	.706 ^{***} (.196)	.708 ^{***} (.196)
CGS	2.85 ^{**} (.447)	2.849 ^{**} (.445)	2.862 ^{***} (.441)
DEF	-.178 (.168)	-.172 (.167)	-.178 (.168)
MID	-.284 [*] (.169)	-.276 (.169)	-.274 (.17)
FWD	-.753 ^{***} (.201)	-.745 ^{***} (.201)	-.736 ^{***} (.201)
INTITA	.687 ^{***} (.111)	.692 ^{***} (.11)	.702 ^{***} (.11)
INTFOR	.661 ^{***} (.087)	.665 ^{***} (.087)	.677 ^{***} (.087)
2001-02	-.571 ^{***} (.179)	-.574 ^{***} (.179)	-.58 ^{***} (.178)
2003-04	-.594 ^{***} (.136)	-.602 ^{***} (.136)	-.617 ^{***} (.137)
2004-05	-.462 ^{***} (.135)	-.463 ^{***} (.136)	-.475 ^{***} (.136)
2006-07	-.527 ^{***} (.13)	-.522 ^{***} (.13)	-.515 ^{***} (.129)
2008-09	-.35 ^{***} (.132)	-.344 ^{**} (.132)	-.33 ^{**} (.132)
2009-10	-.328 ^{**} (.13)	-.339 ^{**} (.13)	-.337 ^{**} (.13)
Const.	19.183 ^{***} (1.015)	19.322 ^{***} (.998)	20.006 ^{***} (.98)
N. of Obs.	1574	1574	1574
N. of Players	908	908	908
F-Value	20.17 ^{***}	20.28 ^{***}	20.38 ^{***}
Adj. R ²	.188	.1889	.1897

Note: Standard errors in parenthesis. Significance levels: [†]10%, ^{*}5%, ^{**}1%).

x time invariant variable not included in model as incorporated in individual fixed effects

In Model 2, contract length, YC2, is measured by the censored contract variable. In this estimation, the estimated effect of one more contract year on player’s performance is still positively significant and its impact is larger than in Model 1; more than one year remaining on the contract increases player’s performance by 17 percent.

Model 3 includes that one-year remaining dummy variable YC3. According to the results, the one-year remaining dummy variable is significant but it has a negative sign. This means that a player with an expiring contract will be less productive relative to a player with a longer-term contract. The coefficient for this variable is -0.352 implying that if a player has a one-year remaining on his contract, his productivity is lower by 35 percent. Again this result completely contradicts the shirking hypothesis.

With respect to the control variables, both AGE and AGESQ are significant except for Model 1. A player’s productivity is negatively affected by age at a decreasing rate with a turning point at the age of 27. A similar result was obtained by Feess et al. (2010). Player’s experience measured by CGP and CGPSQ (the number of career games played in Serie A) does not have the expected (non- linear) impact on performance. Although career experience in Serie A does not impact on player productivity, the number of career goals scored in Serie A, CGS, is positively significant suggesting that goals scored is

a lot more important than actual games played. International experience has a stronger impact. Both dummy variables, INTITA and INTFOR, are positively significant indicating that international players are more productive with respect to non international players. This suggests, as does the significance of CGS, that a player's productivity is not affected by experience itself but mainly by the quality of the experience he has gained so far. Another significant variable is the managerial success variable, MRP, this implies that a manager's success in the past will have a positive effect on the productivity of players.

Summing up, the final results suggest that contract length does have an effect on productivity of a football player in Serie A but it is completely the opposite of the effect predicted. The direction of causation could also be debated; a player's productivity together with his talent determines contract length. According to the results, this direction of causation is more likely for Serie A players. How well a player, who performs during his contract, particularly the last year, should have a considerable impact on the next contract he will be offered. But the data and model are not able to capture this effect. Clubs clearly need to be cautious when determining a contract for a player because recent performance could be out of line with his average ability. A player may have the best season of his career, be offered a long-term contract by a team, and then return to his natural level of talent the next year; the player did not intentionally perform worse than the year before.

The empirical evidence rejects the hypothesis that a player with an expiring contract is more productive than a player with a long-term contract and a player with a long-term contract takes advantage of the guaranteed salary and shirks during the initial years covered by the contract. According to the results, a player at the end of his contract is more productive than a player with a longer contract. Moreover, player's performance improves as he approaches renegotiations at least one year before the end of the contract. The differential between YC1 and YC2 is positive. On the contrary, player's performance decreases when he enters in the last year of his contract.

A possible explanation is given by the common practice of "tapping up" which refers to a process, often facilitated by agents, whereby players are offered to sign for other clubs without the knowledge and the consent of the club with whom the player is registered (Parrish, 2007). According to FIFA regulations, a player whose contract is expiring is allowed to negotiate and sign with other clubs six months before the contract expiration. Furthermore, a player with an expiring contract is able to capture the entire economic rent of his transfer fee and it is likely he knows in advance during the last contract season for which club he will sign. Hence, he might perform under his usual level recognised in the previous seasons in order to avoid injuries. For the new club, the fact that the player will be signed without the payment of a transfer fee is an opportunity that puts in second order the decreasing performance during the last year of contract. Nevertheless, every club hardly allows a player to have only one remaining year of contract, if the player in question is really worthy or talented and if the club does not want to leave the player for free in the transfer market. Consequently, a player in the last year of contract might be an ordinary player, an old player and a player with longer contracts has higher performance could not be surprising as nowadays his bargaining power is

extremely prevailing and he is likely to impose his willingness over the club whenever there are possibilities of being transferred. This means for the player to increase his remuneration. As a final outcome, in general, players might have incentives to perform better even though they have long contracts.

However, the results might be different if we had been control for other factors, such as team chemistry, attitude, hustle and intelligence. Previous literature focusing on American sports that has been able to control for such factors has shown different results. The productivity of a player might be affected by how well he performs with his teammates. According to Berri and Krautmann (2006), an important factor to include might be the ability of a player to shirk during the off-season. If a player does not take care of himself for the season he will not be as productive as he could be. Accordingly, future research should clarify with further developments of the present model whether or not the empirical results here obtained are robust enough.

Conclusions

Fans demand that their teams are set up for the best chance to win. Hence, clubs' responsibility is to provide teams so that the fans that go to the stadium are confident that their teams are going to do well. For this reason, the length of a player's contract is crucial if it impacts on how productive a team will be. The empirical evidence provided reveals that offering long-term contracts to a player may have a small advantage for the club, but the real impact of the contract will depend on what type of player is receiving it.

Offering players long-term contracts may increase the productivity of players, and if so clubs will benefit. More productive clubs could be more successful and the fans will be more willing to attend. As a result they will spend more money. However, long-term contracts will only be offered to those players that provide a high enough reward over the risk of the contract to the club. Nevertheless, in this research, the empirical evidence provides some evidence that there is likelihood that players will perform badly based on free agent incentive effects, then clubs can be justified in focusing more on the player's performance over the last year of his contract rather than putting weight on the performance over the duration of his entire contract. Clubs should perhaps offer contracts that include incentives for players to perform well, in order to avoid a sharp decline in performance before negotiating new possible contract renewals.

To determine if these conclusions are realistic, more research needs to be conducted in this area. The attention has to be addressed on the dependent variable in order to better represent player performance in an objective way. The contrasting results between this study and the previous research require more clarification on this matter on European football. Then, as suggested by Frick (2011), the inclusion of dummy variable that consider the different incentives between old and young players in their last year contract should be included in the model. However, in line with Berri and Krautmann (2006), more interesting it will be to research on how the performance of players without contract renewal. Finally, future research needs to quantify a player's

ability to shirk during the off-season as such opportunities could have a strong impact on how productive a player is and whether he is worth the risk of a long term contract.

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