The Bosman Ruling and the emergence of a single market in soccer talent

by

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Abstract

This paper discusses the effect of the ruling by the European Court of Justice in the Bosman case which delivered freedom of contract to professional soccer players. The result is examined in the context of modern investment theory where contracts between club and player are considered as options to renegotiate the contract or to sell the player to another party. The effects of the ruling are reconsidered in this light and the reaction of the soccer world to these effects are discussed.

A more up-to-date version of this paper can be found in:

"The Bosman Ruling and the emergence of a single market in soccer talent" *European Journal of Law and Economics,* Vol. 9 (2), 2000, pp157 - 73

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Introduction

Until recently, the transfer of professional soccer players between European clubs placed limits on the operations of a free market in that there were rules restricting the terms placed on such transfers. However, the ruling of the European Court of Justice in December 1995 in the *Bosman* case declared that such arrangements were contrary to the provisions of article 48 of the EEC treaty. This ruling has overturned previously existing arrangements and extended to players rights of contractual freedom from which they had been excluded. In this paper we develop a modelling framework based on Dixit and Pindyck (1994) to show that clubs' optimal investment and trading decisions, given some underlying assumptions, are not greatly affected by the new rules.

The Bosman *case*

Jean Marc Bosman was a professional soccer player who had been under contract to the Belgian club R.C. Liegois. In June 1990 his contract expired and he was offered a new contract worth only 25% of the value of his former contract. Unsurprisingly M. Bosman exercised his right under the rules of the Belgian Football Association (URBSFA) to reject the new contract. R.C. Liegois then offered him for transfer for a fee of Bfr 12m. This sum was set as 'compensation' for training expenses incurred by the club according to a strict formula laid down by URBSFA. Since no club was

willing to pay the fee demanded, M.Bosman arranged employment for himself with the French Club U.S. Dunkerque, who in turn were required to pay a reduced 'registration fee' to R.C. Liegois. Both arrangements between U.S. Dunkerque, M.Bosman and R.C. Liegois were subject to the condition that M. Bosman's registration certificate be sent from URBSFA to the French FA (FFF) by the start of the next season, August 2nd 1990. R.C. Liegois, having doubts about US Dunkerque's solvency, did not ask URBSFA to send the certificate to the FFF. Thus R.C. Liegois suspended M.Bosman, preventing him from playing for the rest of the season.

Between August 1990 and December 1995, M. Bosman took his case from court to court. In the meantime, despite being declared a free agent by the Belgian courts, at least circumstantial evidence was mounting pointing to the fact that M. Bosman had been effectively 'blackballed' from entering into any new arrangements. Finally, the Belgian Court of Appeal referred the case to the European Court of Justice (ECJ) to ask for clarification of the question of whether Article 48 of the EEC treaty applied in this situation.

The ECJ Verdict

The ECJ's opinion rested firstly on the principle that sporting activities did not constitute an exception to the provisions of the Treaty of Rome. Thus, previously negotiated agreements between the European soccer governing body, *UEFA,* and the European commission were now ruled to be *ultra vires*. Whilst this may seem uncontroversial, representations to the court on behalf of several soccer governing bodies, including URBSFA, held that soccer was not an economic activity and

therefore not subject to the provisions of the treaty of Rome regarding freedom of movement.

Secondly, the ECJ ruled that Article 48 of the Treaty of Rome, precludes the activity of any sporting body to regulate their own affairs. In this case, since Bosman's freedom to undertake employment as he wished had been compromised, the case rested on whether those rules could be justified under the Treaty of Rome. The court held that they could not and as a result found in favour of M. Bosman.

The narrow case

There are two elements to the narrow case. The first concerns the economic efficiency of the fixed fee system. Prices fixed outside the control of either parties to a deal always have the potential to rule out economic transactions, since either the buyer may find the fixed price too high or the seller find it too low to generate any surplus. In the Bosman case both situations occurred; the original price demanded by R.C. Liegois was too high to interest any buyers, but the reduced registration fee due to be paid by U.S. Dunkerque was too low for R.C. Liegois to risk entering into the transaction.

Abolition of a fixed fee system could therefore be justified on narrow economic grounds alone. However, the ECJ makes no recommendation on the sustainability of the fixed fee system for players' transfers provided those players are within contract. Instead, it is the second element of the case upon which most attention has focused. At the time at which R.C. Liegois attempted to procure a fee for Bosman's services, he was actually out of contract. This had been regarded as a normal practice in

professional sports in Europe, although as a result of reforms in the 1960s a slightly different and less restrictive system existed in the UK. It is this aspect of the case that has caused the most consternation amongst soccer governing bodies.

There are two principal reasons why this should be the case. Firstly, as it was argued, the certainty of receiving a fee for the services of out of contract players acts as an incentive to clubs to invest in training players. A club which can add extra value to a player's skills is acting in its own interests since it could recoup some of those costs or even in some circumstances derive a rent from the sale of a player upon completion of that player's contract. Clubs have argued that the transfer of property rights from clubs to the players themselves will affect their incentives to train and thereby to add value to players' skills.

Against this, the Bosman ruling does not affect the transfer of players in contract. Recently, the transfer of Alan Shearer from Blackburn to Newcastle for £15m was completed whilst the player had a year of his contract to run, Blackburn wishing to cash in on the value of the player whilst he was in contract rather than wait until he became a free agent.

The second reason for the reaction of the soccer world is that players for whom a fee can be demanded may be regarded on the clubs' balance sheet as intangible assets, especially where the transfer value of the player is fixed and therefore certain. In the UK where there are no fixed fee transfers this is perhaps reflected by the fact that very few clubs include such figures in their company accounts. [1]

Modelling Framework

We look first at decisions to invest and trade in discrete time using the options approach of Dixit and Pindyck (1994) and the extend the analysis to continuous time to attempt to capture more of the processes governing club behaviour. We conclude that while the soccer world would be correct to be alarmed if 'in contract' trades had also been made impossible, when players can be traded in contract this conclusion no longer holds.

When deciding on its options in purchasing a player, a club has to make several decisions affecting the path of the future values of the player. Decisions to invest in training the player, including the player in the team for a match or releasing the player for international duty all have important ramifications for the player's value. If the incentives to invest in a player are reduced, clubs will be less willing to undertake activities which will increase the value of players. If this is true for all clubs, then the quality of the game as a whole is likely to suffer. However, since the Bosman ruling does not affect players who are currently under contract, the club always has the option of trading in a player whose value has increased but whose contract has not yet elapsed. Furthermore, it is always possible that the club and player can negotiate a period of extension to the contract, if the value to the club of having the player in its squad is sufficiently great.

The Decision to Invest

We begin with a model of the club's investment decisions over the course of the player's contract period. The model is of a discrete time discrete state process by which a player's value evolves over time. This process is influenced by the amount

of investment that the club undertakes in training the player. The club's objective is to maximise its discounted level of utility over the life of the contract. The level of utility derived from investment in a player is a function of the player's 'market value'(it is assumed that the player's market value reflects the value of his performances). This market value constitutes the state variable in the analysis. It is affected by the level of investment in the player. However, the relationship between investment and market value is not known in advance, but instead depends on the underlying probability that a player is 'good' or 'bad'. In this model, these terms refer to the responsiveness of the player to investment, and may be conditioned by injury or tactical considerations, rather than being intrinsic qualities for the player. Information in this model is *imperfect*, but not necessarily *asymmetric*. It is perfectly possible that players themselves do not have better knowledge about their abilities or possible future development than their coaches do.

The intuition behind the use of a discrete time model is that transfers may be permissible only at certain set points during a year. For instance, transfer rules might prohibit sales of players during the season, or during certain periods of the season. These regimes are common in continental Europe. We use integer values of t to correspond to points in the season when players may be transferred. In the most restrictive case, which allows transfers only during the close season, integer values of t will correspond only to the mid June to mid August period. Transfer windows, which are periods during the season when transfers are permitted can be accommodated by making the terminal value of the time period, T, larger. For instance, if contracts last for 2 years and there are no transfer windows, T will equal 2. If however there is one transfer window a season, T will equal 4.

The player's value to a club is represented by a state variable V_t, which follows a Markov process. At any point in time V_t is known but V_{t+n} is not for any $n > 0$. The club will invest in training a player during the period of his contract, in addition to paying agreed wages. This investment will affect the value of the player and is thus the control variable in the problem. Let I_t denote the (measurable) amount of investment in a player undertaken by the club. I_t may be dichotomous or continuous depending on whether the problem being analysed is about quantity invested or whether to invest or not. Because of the Markov property, I_t must be chosen knowing only V_t.

Following Sloane (1971) we assume that the club is primarily concerned not with its profit but with the flow of utility gained from the player, an intangible fixed asset. In analytical terms this has no effect on the solution to the problem[2]. It is, however a more realistic view of the operation of clubs who are often willing to make financial losses on their soccer activities in the pursuit of title ambitions.

Since the relationship between state and control variable is governed by an underlying probabilistic process, an investing club will need to make assumptions about the underlying distribution of V_{t+n}. $\Phi_t (V_{t+1} | V_t , I_t)$ is the cumulative probability function for the distribution of future values of V_t conditional on current values of V_t and I_t. Since the analysis is concerned with a stream of future utility it is necessary to apply a discount rate. The club will be concerned with maximising the expected net present value of this utility by choosing levels of investment in the player. This stream of utility will be reflected in a set of future payoffs to whatever initial investment the

club made. Let $F_t(V_t)$ be the payoff contingent on values of V_t and $\Omega_t(V_t)$ be the final payoff at time T.

To solve a problem of this type, it is necessary to start at the terminal point and work backwards. Initially we suppose that all contracts are for two years (i.e. T=2) and that it is only possible to vary the amount of investment in a player at integer values of t. There are no sales of players.

At the end of the horizon the payoff to the club of investment in the player is $\Omega_t(V_t)$. By Bellman's principle of optimality a path that is optimal at T-1 will subsume the optimal values of future points in the continuation value expressed in the maximand, which is the sum of present and future payoffs.

$$F_{T-1}(V_{T-1}) = \max_{I_{T-1}} \left\{ U(V_{T-1}, I_{T-1}) + (1/1+\rho)\, E_{T-1}[\Omega_t(V_t)] \right\} \quad (1)$$

The initial condition is, by extension,

$$F_{T-2}(V_{T-2}) = \max_{I_{T-2}} \left\{ U(V_{T-2}, I_{T-2}) + (1/1+\rho)\, E_{T-2}[F_{t-1}(V_{t-1})] \right\} \quad (2)$$

Each expression divides the optimisation problem into two parts, the expression for utility obtained during the current period (the flow of benefits), and the expected future payoffs to action today. Prior to the Bosman ruling, a club that held a player at the end of a contract period was entitled to receive a transfer payment before the player was allowed to seek employment elsewhere. Thus optimal decisions on investment in a player would depend upon the club's expectation of the final payoff

Ω_t (V_t). If the club invested V_0 at the initial point, comprising a sign on fee, a transfer fee to any previous employer and the V_t^-, net present value of the player, V_T-V_0.

This process can be simply shown by a numerical example. Suppose that players' values can either go up or down, with a given probability. F_t, the underlying distribution, can therefore take on two values. Let us suppose that with a probability of 1/3 the player's value will go down to Vt-, and with a probability of 2/3 it will go up to Vt^+. Then Wt (Vt) will simply be (1/3) Vt- + (2/3) Vt^+ which will be positive since Vt- and Vt^+ are both positive.

The post Bosman situation

The key ruling of the European Court in respect of the economic decisions of the club was that players who are out of contract should be treated as all other employees in the EC are, and that clubs should no longer be entitled to a transfer fee on the completion of a contract. In the model of the club's decisions this is analogous to setting the terminal payoff to zero. Since this is a constant, it no longer depends on the club's expectations of its value, nor on the amount of investment put in by the club. Thus the Bellman equation for T-1 is now

$$F_{T-1}(V_{T-1}) = \max_{I_{T-1}} \left\{ U(V_{T-1}, I_{T-1}) + 0 \right\} \qquad (3)$$

The expected present value of any investment by the club is now reduced since, by Bellman's principal of optimality, the continuation value of the contract is lessened for any prior period. So whilst the Bellman equation at T-2 is formally unchanged as

$$F_{T-2}(V_{T-2}) = \max_{I_{T-2}} \left\{ U(V_{T-2}, I_{T-2}) + (1/1+\rho)\, E_{T-2}\left[F_{t-1}(V_{t-1})\right] \right\} \quad (4)$$

since $(1/1+\rho)\, E_{T-2}\left[F_{t-1}(V_{t-1})\right]$ now subsumes the reduced final payoff its value will be smaller than previously. Provided therefore that V_t is an increasing function of I_t, the club's incentive to invest will be reduced accordingly.

This would seem to bear out the clubs' fears that the Bosman ruling would decrease the clubs' investment in players to the detriment of the game. However, the club has more than just the one decision of how much to invest in the player. It can also decide to stop investing under the current terms of the contract. In this sense the contract between club and player is actually an option held by the club that allows it to either *renegotiate* the player's contract, or to *sell* on the option to do so to another party. This aspect of the decision making process has been left untouched by the Bosman ruling. Whilst the club is no longer entitled to a fee in respect of the services of a player who is out of contract, the concept of a transfer fee itself has not been modified in any way. A club is still entitled to a fee for a player whose contract period has not yet elapsed. Pronouncements from a number of people in the soccer world in the wake of the Bosman judgement were indicative of the belief that transfer fees themselves would no longer be payable under any circumstances. In fact, the majority of transfers had always affected in contract players. In the year preceding the Bosman ruling, around 90 percent of transfers involving top flight players in the UK had involved in contract players. Similarly in the year since the Bosman ruling there has been little evidence in the UK that transfer fees have been decreasing.

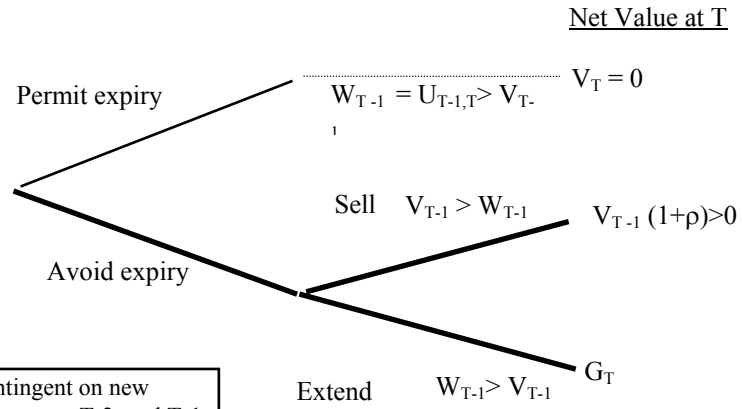
These 'stylised facts' are indicative of the opportunity that the club purchases when it signs a player to terminate the contract for some payoff, or to switch contracts to a new re-negotiated contract, which due to employment law must be of a higher value to the player. The club will act so as to maximise the expected present value of the stream of utility gained from the player's contract. If the payoff to selling the player is greater than the utility gained from the player, the club will sell the player and take the termination payoff.

The decision to sell or hold a player

If a club sells a player at *t* this is because the market value of the player V_t is less than the value of the player internally W_t. This may be because the player fits in well with the requirements of the team, has club-specific skills, or could be due to familiar asymmetric information problems.

In Figure 1 this is shown explicitly. A contract will be held to termination only if the internal value of the player W_{T-1}, which exceeds the market value at T-1, V_{T-1}. Since the terminal value is 0 W_{T-1} is simply the flow of utility during the last period ($U_{T-1,T}$),

Figure 1: The club's options, to hold, sell , or re-negotiate at T-1



The decision to sell or hold may be contingent on new information which becomes available between T-2 and T-1, such as whether a player's form has improved or deteriorating.

Formally, the Bellman equation need only be modified slightly to capture this effect. The termination payoff at time T will still be $\Omega_t (V_t)$. However at time T-1, the Bellman equation will be modifiable to take into account the new terms

$$F_{T-1}(V_{T-1}) = \max_{I_{T-1}} \left\{ U(V_{T-1}, I_{T-1}) + (1/1+\rho) E_{T-1} [\Omega_t (V_t)], F_{T-1}(V_{T-1}), G_t(V_t) \right\} \quad (5)$$

where G_t is the payoff (i.e. the present value of the player's worth minus any expenditure on the part of the club) from a re negotiated contract. Within this structure, the club will continue investing in the player through the current contract if the expected payoff to investing is greater than the payoffs to the club from either selling the player during the contract or renegotiating the contract. It follows that if the terminal payoff is known to be zero at T-1, the club will not renegotiate if the

expected utility gained from the player during the new contract is negative. Under these circumstances it faces the choice between selling the player or keeping the player and allowing his value to depreciate to zero. Clearly it will only keep the player if the transfer payoff is less than the expected utility gained from keeping the player on in contract. This situation is only likely to occur when players near the end of their career.

Extension to Continuous time

In practice this type of model not only implies that the transfer system is highly restrictive but that utility flows are only measured at the end of the season. This is not likely to be the case. In this case the model can be made a more accurate reflection of actual behaviour by switching to continuous time. This actually is a closer approximation to the transfer system in the UK where trade may occur at any time except at certain prohibited points during the season . Typically these points lie towards the ends of the seasons and exist to prevent clubs contesting trophies from 'buying the championship'.

The optimal paths generated by continuous stochastic processes are derived by allowing the time interval Δt to go to zero and imposing some process governing the path of the state variable. Typically these processes are either continuous Brownian motion type processes or Poisson or 'jump' processes. Since the value of a player is continuously evolving and is likely to do so around some time trend as players develop physically, Brownian motion processes seem most the most realistic way of capturing these effects.

When the interval Δt, which we had previously fixed as one year is reduced, the discount rate becomes $\frac{1}{1+\rho\,\Delta t}$. For the flow of utility deriving from a player with value V_t , $U(V, I, t)\,\Delta t$, the Bellman equation becomes

$$F(V, t) = \max_{I} \left\{ U(V, I, t) + (1+\rho\,\Delta t)^{-1} E_t \left[F_{t+\Delta t}(V_{t+\Delta t})|V, I\right] \right\} \quad (6)$$

Using the notation V' to refer to future states of V and multiplying by $1+\rho\,\Delta t$

$$\rho\,\Delta t\, F(V, t) = \max_{I} \left\{ U(V, I, t) + \Delta t(1+\rho\,\Delta t)\ E\left[F(V', t+\Delta t) - F(V,t)\right] \right\}$$

$$= \max_{I} \left\{ U(V, I, t) + \Delta t(1+\rho\,\Delta t)\ E\left[\Delta F\right] \right\}. \quad (7)$$

As can be seen here, the total payoff F(V,t) is composed of the utility value at present plus the discounted expected change in this payoff value over future periods. We can make this expression explicitly continuous by dividing by Δt and allowing it to go to zero.

$$\rho\, F(V,t) = \max_{I} \left\{ U(V, I, t) + 1/dt\ E\left[dF\right] \right\}. \quad (8)$$

where $(1/dt)E[dF]$ is the limit of $E[\Delta F]/\Delta t$. This expectation is dependent on current values of the state and control variables. Additionally, as will become clear when looking at the rules for evolution of the state variable, it is necessary to calculate the influence of changes in both V and t when calculating the change in the objective function F over dt.

As Dixit and Pindyck (1994) explain, this form of the Bellman equation breaks down the investment problem into two terms. The first term on the right hand side of the equation is the immediate payout or value of the asset, in this case the player's contract, whereas the second part is the expected rate of capital gain over the time interval dt. The maximisation problem is to find a level of investment in the player that maximises the sum of these two terms. Optimal investment means that the club is maximising both the current value of the player and the expected gain in that value (or minimising the expected loss if the future value is expected to show a negative drift).

This requires a mechanism for forming expectations of the future value of these variables. Two classes of stochastic process yield tractable results, Poisson and Ito processes. In this case, we will work with an Ito process, geometric Brownian motion. This breaks the state variable's evolution up into drift and diffusion parameters:

$$dV = a(V, I, t)\,dt + b(V, I, t)\,dz \tag{9}$$

where dz is the increment of a Wiener process[3]. The flow of utility from the player is as before U(v, i ,t) and the payoff value of the player is F(v,t). We denote the state variable at time t as being V and V' as being the state variable at time $t+\Delta t$.

This process deals with the second term on the right hand side of the Bellman equation, governing the evolution of F(V,t). This term is actually the total differential of the Ito process above. To find this total differential, however, we will need to apply Ito's lemma:

$$dF = \frac{\delta F}{\delta t}dt + \frac{\delta F}{\delta x}dx + \frac{1}{2}\frac{\delta^2 F}{\delta x^2}\left(dx^2\right) \qquad \textbf{(10)}$$

The final term in Ito's lemma, $\frac{1}{2}\frac{\delta^2 F}{\delta x^2}\left(dx^2\right)$, expresses the fact that by the Jensen inequality the expectation of F, a function of x, and the expectation of x will not be the same.

Applying Ito's lemma to the expected change in F in the Bellman equation,

$E_t\,[F_{t+\Delta t}\,(V_{t+\Delta t})|V, I\,]$, we get

$$F(V,t) + \left[F_t(V, t) + a\,(V, I,t\,)F_V(\,V,t\,) + 1/2\;b^2\,(V,I,t)\;F_{VV}(V,t)\right]\Delta t + 0\,(\Delta t) \qquad (11)$$

where $0\,(\Delta t)$ are terms that go to zero faster than Δt. Setting this equal to discounted expected returns as in the Bellman equation, we arrive at the equilibrium condition, where expected returns to the asset are exactly equal to the sum of present returns and expected future returns.

$$\rho F(V,t) = \max_{I} \left\{U(V, I, t) + F_t(V, t) + a\,(V, I,t\,)F_V(\,V,t\,) + 1/2\;b^2\,(V,I,t)\;F_{VV}(V,t)\right\} \qquad (12)$$

This equilibrium condition is again an extension of Bellman's principle governing the optimal path of the variable over time. By extension the payoff at any point in time , F(V,t) can be found by working backwards from the termination payoff $\Omega\,(V_T, T)$, and hence the optimal level of investment, that maximising the Bellman equation, can be found for any t.

The decision to renew the contract or the sell the player is also determined by an analogous process in continuous time. The Bellman equation once again divides the value of the player into two time periods, the period up to the present and the future

where the future period is the expected net present value of the option to sell or renew the contract . Both the utility flow and the payoff to terminating the current contract are dependent upon the player's current value, V_t , and t. If V_t follows an Ito process, for any t there is a value V^*_t which divides the mapping into a region where continuation is optimal and one where termination is optimal. In this case the termination of the contract (which, of course, may involve the exercise of a compound option in negotiating a new contract) will be relatively less attractive if the immediate utility from continuation is not increasing relative to the termination payoff. Conversely, continuation becomes more attractive under these circumstances if the immediate utility gained is increasing relative to the termination payoff. Mathematically,

$U(V, t)\,dt + \frac{\rho\, dt}{1+\rho\, dt}\Omega(V,t)$ must be an increasing function of V for each t for continuation to be desirable. Two conditions must be satisfied for this to be the case. The first order condition is that in the stopping region, the expected present value of the payoff to the club must be equal to the current termination payoff. The only situation where this is likely to be the case is when the player's transfer value falls to zero within the contract period. Since the expected termination payoff in the post Bosman world is always zero, no club will ever reach such a boundary condition unless the player's value is zero and the club believes it is not likely to rise temporarily above zero in the before the time horizon elapses. Once again this is generally likely to be the case with players who are nearing the end of their careers or are believed not to be of sufficient quality.

The boundary derived from the first order condition itself however, is endogenous, since it depends on the path of a state variable that is itself determined within the system. In order to derive a complete solution it is necessary that the "smooth pasting" constraint holds: not only the values of the termination payoff and continuation payoff as functions of the state variables but their derivatives are equal. In this case we require that

$$\frac{\partial F}{\partial V}\left(V^*(t),t\right)=\frac{\partial \Omega}{\partial V}\left(V^*(t),t\right) \text{ for all t.} \qquad (13)$$

Implications

The implication of an analysis based upon new investment theory is that soccer clubs' predictions of financial calamity are unlikely to be correct. There are two reasons why this should be the case. Firstly, the Bosman ruling has actually affected only a minority of potential transfers. Players who change clubs within the term of a contract can still do so only upon payment of a transfer fee. Since the Bosman ruling approximately 90 percent of all transfers involving English F.A. Premiership clubs have involved in-contract players, and therefore the payment of a transfer fee, even under the Bosman rules. If clubs believed that it is in the interests of the game to ensure that a fee is paid to clubs who have developed a player's talents, then there is no legal prohibition to their setting up a levy scheme to protect 'nursery' clubs as ECJ official Carl Otto Lenz has suggested.

A second reason for the unlikelihood of a financial breakdown is that the behaviour of clubs and players within the system can adapt easily to the new circumstances, just as the Coase theorem would have predicted. After the transfer of property rights

engendered by the Bosman ruling, the behaviour of those institutions affected has changed to accommodate that change. Since the Bosman ruling a number of individual cases have occurred that indicate that some adaptation is already occurring. The most celebrated of these occurred in August 1996, when Blackburn Rovers sold Alan Shearer to Newcastle United when the player still had two years of his contract at Blackburn left to run. The reasoning employed by the board at Blackburn was that they would rather receive a transfer fee and terminate the contract than receive the stream of utility from the player during the remainder of his contract period. This behaviour is exactly as investment theory would predict. Similarly, the two main publicly quoted soccer clubs, Tottenham Hotspur and Manchester United have both placed all their most valuable players on five year contracts. Whilst this involves the club paying more to the players themselves, the value of the stream of utility deriving from the new contract is obviously greater than either the utility flow deriving from the continuation of the current contract or the termination of that contract, especially because the costs of these new contracts also include the value of the option to sell the player at a later date for some positive transfer fee. As yet few of the F.A. Premiership clubs have followed this course of action. Where clubs have not done so, this cannot be ascribed to changes in circumstances alone.

A further complaint has been that smaller clubs, who rely for much of their income upon discovering, nurturing and selling on new talent would be hit hardest by the new rules. However, even here there is no reason to suppose that this will be the case. If a player is sufficiently talented to be signed by one of the larger clubs, no club will run the risk of waiting for his contract to elapse so that the player becomes available free. Any club that does so runs the risk of a rival being willing to buy the player

during the contract period and thus missing out on the player. Similarly, smaller clubs will ensure that their players remain in contract when any sale takes place. Thus transfers will be governed by the same rules of investment behaviour and free transfers will be unlikely to take place. In fact both before and since the Bosman ruling, the majority of players leaving small clubs on free transfers have gone to other small clubs. Once again fears about the development of a predatory market have proved groundless.

The main prediction of soccer analysts in the immediate aftermath of the verdict was that was that the judgement would result in a large scale transfer of wealth from clubs to players. As clubs would no longer be required to pay transfer fees for out of contract players, all benefits from changing clubs would accrue to the players themselves. As has been demonstrated, this has not been the case, although it is not possible to show this directly as there is a lack of publicly available information regarding the finances of the game. However, average transfer fees in the English premiership have risen, even post Bosman. At the same time, since no player is likely to change clubs without the offer of an increased wage, it is reasonable to surmise that players wages are going up at the same time. Thus some exogenous factor is required to explain why rather than any transfer of wealth there has been an increase in the wealth of both clubs and players. There is one likely candidate for this effect. Across Europe, the payoffs to running a successful club have increased dramatically as a result of increased fees generated by selling broadcasting rights. In England, for instance, the price generated by successive auctions of broadcasting rights has risen tenfold since the late 1980s, a pattern which has been replicated to a greater or lesser degree not only across the continent but mutatis mutandem for principal sporting

events world-wide. In each case this process has been driven by the entry into previously static markets by new challengers, either through technological change or through deregulation. For the UK, the crucial point was the securing of TV rights by Sky TV for £307 million in 1992. When this happened the payoffs to success instantly became far greater for the individual clubs. As the potential rewards became greater so did the optimal amounts of investment in new players. By increasing the potential streams of revenue to be gained from success, the relative payoffs to clubs for making large investments in players also increased. Thus since the early 1990s, a spiral in both transfer fees and players wages has occurred in top level clubs. This spiral has survived straitened macroeconomic circumstances in Europe as well as the spectacular near collapse of the Italian game in the wake of the '*tangentopoli'* corruption investigations. As pay per view television comes on stream in Europe and new deals are struck between the clubs and broadcasters, this process is likely to continue. Already, gate receipts take up an ever smaller fraction of large clubs incomes, with the main sums coming from TV revenues and merchandising. Whilst there is potential for expansion of these sources of revenue the process is likely to continue.

As yet there has been very little data produced on transfer fees and contract levels in the post Bosman period. As more clubs publish accounts detailing revenue received from transfers and costs paid out in wages, further empirical investigation will be possible.[4] Since these issues arise in other labour markets, for instance in the type of 'option' contracts prevalent in the entertainment industry and the currently

controversial topic of executive remuneration, there are a number of possible ways to test the generality of these models

The Bosman ruling has forced several European soccer governing bodies to rethink their rules on transfers. The main aim of these rethought rules has been to attempt to restore the advantage clubs possessed under the old "retain and transfer" type system without contravening EC law. In England, under a proposed new system, transfer fees will be payable for out of contract players under the age of 24, provided that they are moving from one English club to another, as an incentive to clubs to invest in training young players without having to take the risk of placing them on longer contracts. Whilst this appears to contravene the spirit of the Bosman judgement, the legal institutions of the European community will be unable to intervene as long as neither the Commission nor any individual brings a case. With the powers of the EC to initiate investigation limited, it seems unlikely that this compromise would face legal challenge.

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[1] In fact, out of all FA premiership clubs, only Tottenham actually list estimates of their players' value in their company accounts.

[2] As a special case the Utility flow may be regarded as a flow of money deriving from all sources due to the player. For instance it may be the sum total of the player's contributions to prize money, gate receipts, televising fees and sundry merchandising

[3] A Wiener process obeys a set of evolutionary rules. They are Markov processes with independent increments and changes over a finite time interval are distributed normally.

[4] The Soccer world is highly secretive in its release of information and data on individual transfer fees and contracts are not allowed directly into the public domain and often have to be gleaned from secondary sources. It will however be possible to test general hypotheses about the size of clubs budgets from company accounts.